OMB No. 2040-0042 Approval Expires 12/31/2018

United States Environmental Protection Agency
Washington, DC 20460

Completion Form For Injection Wells

Administrative Information

1. Permittee: Florence Copper Inc.

Address *(Permanent Mailing Address) (Street, City, and ZIP Code)*: 1575 W Hunt Hwy, Florence, AZ 85132

2. Operator: Florence Copper Inc.

Address *(Street, City, State and ZIP Code)*: 1575 W Hunt Hwy, Florence, AZ 85132

3. Facility Name: Florence Copper Inc.

Telephone Number: (520) 374-3984

Address *(Street, City, State and ZIP Code)*: 1575 W Hunt Hwy, Florence, AZ 85132

4. Surface Location Description of Injection Well(s)

State: Arizona

County: Pinal

Surface Location Description

SW 1/4 of SW 1/4 of NE 1/4 of SW 1/4 of Section 28 Township 4S Range 9E

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 1150 ft. frm (N/S) N Line of quarter section and 1040 ft. from (E/W) E Line of quarter section.

Well Activity

- [ ] Class I
- [ ] Class II
  - [ ] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [x] Class III
- [ ] Other

Well Status

- [x] Operating
- [ ] Modification/Conversion
- [ ] Proposed

Type of Permit

- [ ] Individual
- [x] Area : Number of Wells 33

Lease Number: NA

Well Number: I-04

Submit with this Completion Form the attachments listed in Attachments for Completion Form.

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Ian Ream, Senior Hydrogeologist		9-12-2018

Attachments to be submitted with the Completion report:

I. Geologic Information

1. Lithology and Stratigraphy

A. Provide a geologic description of the rock units penetrated by name, age, depth, thickness, and lithology of each rock unit penetrated.

B. Provide a description of the injection unit.

(1) Name
(2) Depth (drilled)
(3) Thickness
(4) Formation fluid pressure
(5) Age of unit
(6) Porosity (avg.)
(7) Permeability
(8) Bottom hole temperature
(9) Lithology
(10) Bottom hold pressure
(11) Fracture pressure

C. Provide chemical characteristics of formation fluid (attach chemical analysis).

D. Provide a description of freshwater aquifers.

(1) Depth to base of fresh water (less than 10,000 mg/l TDS).
(2) Provide a geologic description of aquifer units with name, age, depth, thickness, lithology, and average total dissolved solids.

II. Well Design and Construction

1. Provide data on surface, intermediate, and long string casing and tubing. Data must include material, size, weight, grade, and depth set.

2. Provide data on the well cement, such as type/class, additives, amount, and method of emplacement.

3. Provide packer data on the packer (if used) such as type, name and model, setting depth, and type of annular fluid used.

4. Provide data on centralizers to include number, type and depth.

5. Provide data on bottom hole completions.

6. Provide data on well stimulation used.

III. Description of Surface Equipment

1. Provide data and a sketch of holding tanks, flow lines, filters, and injection pump.

IV. Monitoring Systems

1. Provide data on recording and nonrecording injection pressure gauges, casing-tubing annulus pressure gauges, injection rate meters, temperature meters, and other meters or gauges.

2. Provide data on constructed monitor wells such as location, depth, casing diameter, method of cementing, etc.

V. Logging and Testing Results

Provide a descriptive report interpreting the results of geophysical logs and other tests. Include a description and data on deviation checks run during drilling.

VI. Provide an as-built diagrammatic sketch of the injection well(s) showing casing, cement, tubing, packer, etc., with proper setting depths. The sketch should include well head and gauges.

VII. Provide data demonstrating mechanical integrity pursuant to 40 CFR 146.08.

VIII. Report on the compatibility of injected wastes with fluids and minerals in both the injection zone and the confining zone.

IX. Report the status of corrective action on defective wells in the area of review.

X. Include the anticipated maximum pressure and flow rate at which injection will operate.

HALEY & ALDRICH, INC.
One Arizona Center
400 E. Van Buren St., Suite 545
Phoenix, AZ 85004
602.760.2450

TECHNICAL MEMORANDUM

14 September 2018
File No. 129687-010

TO: Florence Copper Inc.
Ian Ream, Senior Hydrogeologist

FROM: Haley & Aldrich, Inc.
Lauren Candreva, R.G.

Subject: Drilling, Installation, and Integrity Testing Summary
PTF Injection Well I-04
Florence Copper Inc., Florence, Arizona

This document summarizes the drilling, installation, and testing of Production Test Facility (PTF) injection well I-04 for Florence Copper Inc. (Florence Copper) in Florence, Arizona, including the equipment used to perform the work, completion, and the results of well testing activities. Separate well completion reports have been created for each PTF well.

The Arizona Department of Water Resources Registry ID for well I-04 is 55-227966 and the Well Registry Report is included in Appendix A. The well is located in the southeast quarter of the northwest quarter of the southwest quarter of Section 28 of Township 4 north, Range 9 East of the Gila and Salt River Baseline and Meridian (D(4-9)28CBD). Well I-04 is located within the Underground Injection Control (UIC) Permitted Area of Review (AOR) for UIC Permit R9UIC-AZ3-FY11-1 and was completed as a Class III injection well for the PTF (Figure 1).

Florence Copper contracted Hydro Resources to drill, install, and test well I-04 in accordance with *Well Specification: Drilling, Installation, and Testing of Class III Injection and Recovery Wells, Production Test Facility, Florence, Arizona* (Haley & Aldrich, Inc. [Haley & Aldrich], 2017). A Challenger 280 drilling rig was used for all drilling and construction activities. Haley & Aldrich provided oversight of drilling activities, geophysical logging, well installation, and testing. All reported depths are in feet below ground surface unless otherwise noted.

I. Geologic Information

1. Lithology and Stratigraphy

   A. Geology of Penetrated Units

   The geology penetrated during the drilling of the Class III well I-04 is summarized below and a lithologic log is included in Appendix B.

Lithologic Unit Name	Depth to Bottom of Unit (feet)	Thickness of Unit (feet)	Lithology and Age of Unit
Upper Basin Fill Unit (UBFU)	280	280	Alluvium; Quaternary to Tertiary
Middle Fine-Grained Unit (MFGU)	300	20	Alluvium; Tertiary
Lower Basin Fill Unit (LBFU)	365	65	Alluvium; Tertiary to Cretaceous
Bedrock Oxide Unit (Oxide)	Not encountered	>860	Igneous porphyry; Precambrian

   B. Description of Injection Unit

Parameter	Bedrock Oxide Unit
Depth Drilled	1,225 feet
Thickness	>860 feet
Formation Fluid Pressure	Atmospheric plus head of freshwater; no additional formation pressure
Age of Unit	Precambrian with intrusions of Precambrian to Tertiary rocks
Porosity[1]	Average = 8.1%
Permeability	Hydraulic conductivity = 0.56 feet per day
Bottom Hole Temperature	28.6 degrees Celsius
Lithology	Igneous porphyry: quartz monzonite, granodiorite with diabase and andesite dykes (detailed log included in Appendix B)
Bottom Hole Pressure	Approximately 430 pounds per square inch (PSI) (pressure exerted by the column of freshwater with no additional contribution from formation pressure)
Fracture Pressure	0.65 PSI per foot
[1] Porosity values calculated from neutron borehole survey conducted at Injection Well I-04.	

C. Chemical Characteristics of Formation Fluid

The chemical characteristics of the formation fluid in the injection zone are summarized below and are the results of the sampling of the center PTF wellfield well R-09. The table below summarizes the primary chemical characteristics detected in a formation fluid sample collected on 23 April 2018; the complete analytical report is included in Appendix C.

Analyte	Result (mg/L)
Metals	
Aluminum	<0.08
Antimony	<0.005
Arsenic	0.0016
Barium	0.071
Beryllium	<0.0005
Cadmium	<0.00025
Calcium	140
Chromium	0.0051
Cobalt	<0.00025
Copper	0.011
Iron	<0.30
Lead	<0.0005
Magnesium	27
Manganese	0.002
Mercury	<0.001
Nickel	0.0033
Potassium	6.8
Selenium	<0.0025
Sodium	170
Thallium	<0.0005
Zinc	<0.04
Anions	
Bicarbonate	150
Chloride	310
Fluoride	<0.5
Nitrate	8.8
Sulfate	190
Field Parameters	
Total Dissolved Solids	1,000
pH	7.8
Radiochemicals	
Uranium	0.016
Notes: *mg/L = milligrams per liter*	

Sampling results for well I-04 are included in the *PTF Mine Block Ambient Groundwater Concentrations and Initial Discharge Characterization of the Underground Workings* (Brown and Caldwell, 2018).

D. Description of Freshwater Aquifers

1) The depth to the base of the freshwater aquifer is defined by the interface at which deeper formation fluid exhibits a total dissolved solids (TDS) value of 10,000 milligrams per liter (mg/L). The depth of the 10,000 mg/L interface is deeper than all the wells drilled at the site and consequently has not been defined.

2) A geologic description of the aquifer units is included below:

Aquifer Unit Name	Age	Depth (feet)	Thickness (feet)	Lithology	Average Total Dissolved Solids[1] (mg/L)
UBFU	Quaternary/Tertiary	0 to 280	280	Alluvium	914
LBFU	Tertiary	300 to 365	65	Alluvium	754

[1] Average TDS values calculated from UBFU and LBFU monitoring well ambient monitoring results near the PTF.

II. Well Design and Construction

1. Well I-04 Casing Installed:

Casing	Material	Diameter (inches)	Weight (pounds per foot)	Depths (feet)	Borehole Diameter (inches)	Drilling Method
Surface	Mild steel	24 O.D. 23¼ I.D.	94.71	0 to 40	30	Solid-stem auger
Overburden (intermediate)	Mild steel – bottom 40 feet poly-coated	14 O.D. 13⅜ I.D.	47.36	0 to 500	20	Reverse flooded rotary
Well casing	FRP	5.47 O.D. 4.74 I.D.	5.40	-1.4 to 520	Inside overburden casing to 500 feet; 12¼	Inside overburden casing/reverse flooded rotary
Screen	PVC Sch. 80 with 0.080-inch-wide slots	5.56 O.D. 4.81 I.D.	4.08	520 to 641 659 to 879 899 to 1,199	12¼	Reverse flooded rotary
Blank intervals	Stainless steel Sch. 40 – Type 316L	5.56 O.D. 5.047 I.D.	14.75	640 to 659 879 to 899	12¼	Reverse flooded rotary

Notes:
FRP = fiberglass-reinforced plastic
I.D. = inside diameter
O.D. = outside diameter
PVC = polyvinyl chloride
Sch. = Schedule

2. Well Cement

Cement Interval	Cement Type	Additives	Amount Installed (cubic yards)	Method of Emplacement
Surface casing	Type V Neat 21 sack slurry	None	4	Submerged tremie
Overburden casing	Type V Neat 21 sack slurry	None	24.3	Displacement – installed through drillable grout shoe with one-way stab-in valve and welded to the bottom of the casing
Well casing	Type V Neat 21 sack slurry	None	13.4	Submerged tremie

Field forms documenting pipe tallies, annular materials, and cement tickets are included in Appendix D.

3. Annular Packers

No annular packers were used during construction of well I-04.

4. Centralizers

Casing	Centralizer Type	Number and Spacing
Overburden	Mild steel – welded	12 installed – every 40 feet
Well – FRP and PVC	Stainless steel – heavy duty	30 installed – every 40 feet
Notes: *FRP = fiberglass reinforced plastic* *PVC = polyvinyl chloride*		

5. Bottom Hole Completion

There is no bottom hole completion, as this is not an oil/gas well. The well was completed at the bottom with a stainless-steel endcap of the same diameter as the well screen.

6. Well Stimulation

No well stimulation was used during the drilling and construction of well I-04.

III. Description of Surface Equipment

1. Surface Equipment

Well I-04 is an injection well and has been equipped with an inflatable packer. The 2-inch diameter injector pipe extends from the well head and into the manifold that conveys the injection fluid from the plant on-site. A diagram of the wellhead is included as Figure 2.

IV. Monitoring Systems

1. Well Monitoring Equipment

Equipment Type	Location	Type	Purpose
Pressure transducer	Well casing – approximately 400 feet bgs	Recording	Monitor water column/pressure
Pressure transducer	Well casing – on packer at 640 feet bgs	Recording	Monitor water column/pressure
Flow meter	Wellhead	Recording	Monitor injection rate
Pressure transducer	Wellhead	Recording	Monitor wellhead pressure
***Notes**:* *bgs = below ground surface*			

2. Monitoring Wells

A total of 16 monitoring wells are associated with the PTF: 7 point-of-compliance (POC) wells, 7 United States Environmental Protection Agency (USEPA) supplemental monitoring wells, and 2 operational monitoring wells. The POC wells are located outside the AOR and are not constructed as Class III wells. The supplemental monitoring and operational monitoring wells are located within the AOR and are constructed as Class III wells as required by the UIC Permit. The wells are summarized in the tables below by type.

POC Wells						
Well ID	**Location X/Y (State Plane NAD 83)**	**Depth (feet)**	**Well Nom. Diameter (inches)**	**Cementing Method**	**Screened Interval (feet)**	**Screened Lithologic Unit**
M14-GL	846750.23 746461.52	859	5 9/16 OD	Submerged tremie	778 to 838	LBFU
M15-GU	846697.17 746464.82	615	5 9/16 OD	Submerged tremie	554 to 594	LBFU
M22-O	846751.26 746514.47	1,140	5 9/16 OD to 528 feet; 4½ OD to 1,140 feet	Submerged tremie	932 to 1,130	Oxide

POC Wells						
Well ID	**Location X/Y (State Plane NAD 83)**	**Depth (feet)**	**Well Nom. Diameter (inches)**	**Cementing Method**	**Screened Interval (feet)**	**Screened Lithologic Unit**
M23-UBF	846688.13 746512.48	250	6 5/8 OD	Submerged tremie	210 to 250	UBFU
M52-UBF	851092.00 774178.00	274	5 9/16	Submerged tremie	198 to 273	UBFU
M54-LBF	847331.96 746682.61	630	5 9/16	Submerged tremie	310 to 629	LBFU
M54-O	847342.99 746702.36	1,199	5 9/16	Submerged tremie	668 to 1,198	Oxide
OD = outside diameter						

Supplemental Monitoring Wells						
Well ID	**Location X/Y (State Plane NAD 83)**	**Depth (feet)**	**Well Nom. Diameter (inches)**	**Cementing Method**	**Screened Interval (feet)**	**Screened Lithologic Unit**
M55-UBF	847541.46 746280.63	261	5	Submerged tremie	240 to 260	UBFU
M56-LBF	847518.70 746303.41	340	5	Submerged tremie	320 to 340	LBFU
M57-O	847378.37 746248.93	1,200	5	Submerged tremie	523 to 1,199	Oxide
M58-O	847672.23 746595.97	1,200	5	Submerged tremie	594 to 1,199	Oxide
M59-O	847934.95 746218.89	1,201	5	Submerged tremie	534 to 1,199	Oxide
M60-O	847599.37 745903.70	1,201	5	Submerged tremie	444 to 1,200	Oxide
M61-LBF	848184.46 746148.88	629	5	Submerged tremie	429 to 629	LBFU

Operational Monitoring Wells						
Well ID	**Location X/Y (State Plane NAD 83)**	**Depth (feet)**	**Well Nom. Diameter (inches)**	**Cementing Method**	**Screened Interval**	**Screened Lithologic Unit**
MW-01-LBF	847487.97 746360.54	444	5	Submerged tremie	330 to 440	LBFU
MW-01-O	847499.04 746369.31	1,200	5	Submerged tremie	500 to 1,200	Oxide

V. Logging and Testing Results

Borehole geophysical logging was conducted on well I-04 in four phases: 1) open-hole surveys in the 20-inch borehole prior to installation of the overburden casing; 2) cased-hole surveys in the 14-inch casing; 3) open-hole surveys in the 12.25-inch borehole prior to installation of the well casing and screen; and 4) cased-hole surveys in the completed well.

The open-hole geophysical surveys completed at I-04 included:

- Spontaneous potential;
- Natural gamma;
- Electrical resistivity (short and long normal);
- Neutron;
- Caliper with calculated volume;
- Temperature;
- Sonic; and
- Deviation.

The cased-hole geophysical surveys completed included:

- Cement bond log (overburden steel casing);
- Sonic (for cement bond with fiberglass reinforced plastic [FRP]);
- 4 pi density (for cement bond with FRP);
- Dual density (for cement bond with FRP);
- Natural gamma;
- Fluid conductivity;
- Temperature; and
- Gyroscopic deviation.

Open-hole geophysical surveys were used to support identification of the lithologic contacts, to evaluate the condition of the borehole, and to evaluate the deviation of the borehole.

The primary logs used to evaluate the lithologic contacts were natural gamma ray, short (16-inch) and long (64-inch) normal electrical resistance, and single-point resistance. The neutron survey was primarily used to evaluate the porosity of the formation; it was only conducted on select wells.

The lithologic contacts for the Middle Fine-Grained Unit (MFGU) were selected based on the short and long resistance and the single point resistance. All the resistivity values decreased and remained consistently low through the MFGU. This contact is generally characterized by a relatively sharp decrease in resistance at the top of the unit and a gradual increase in resistance below the bottom of the unit.

The contact between the Lower Basin Fill Unit (LBFU) and the bedrock was identified primarily using the natural gamma and correlated with the resistance logs. There is a consistent increase in gamma values at the contact between the LBFU and the bedrock that was identified and documented at the site during exploration in the 1990s. For well I-04, the gamma values are consistent at approximately 50 American Petroleum Institute (API) units throughout the Upper Basin Fill Unit (UBFU) and MFGU, increase slightly to approximately 60 API units in the LBFU, and then increase at 365 feet to over 90 API units. After the increase at 365 feet, the natural gamma begins to vary more than in the alluvial units. This change in the response of the natural gamma indicates the contact with the bedrock unit. Also, at this approximate depth, the resistance increases, likely because the bedrock contains less water, leading to increased resistivity.

Cased-hole geophysical surveys were conducted to evaluate the cement seal and the casing-cement bond, to document baseline fluid temperature and conductivity, and to evaluate the plumbness of the well. The cement bond is discussed in Section VII.

Copies of all the open-hole geophysical logs and cased-hole temperature, fluid conductivity, and natural gamma logs are included in Appendix E; a figure summarizing the open-hole logs used to evaluate geology is included as Figure 3. The cased-hole logs used to evaluate the cement bond are included in Appendix F**.**

VI. Well As-Built Diagram

A diagram showing the wellhead completion for well I-04 is included as Figure 2. An as-built diagram for well I-04 is included as Figure 4.

VII. Demonstration of Mechanical Integrity

A demonstration of Part I mechanical integrity of the well was completed using a standard annular pressure test (SAPT) in accordance with Part II.E.3.a.i.A of the UIC Permit. Mechanical integrity will be demonstrated every 2 years during operations and will be confirmed by daily injection pressure monitoring that will be conducted per the UIC Permit once the well is operational. The SAPT for well I-04 is summarized below.

The SAPT was conducted by installing an inflatable straddle packer assembly in the well. The bottom packer was installed near the bottom of the FRP-cased portion of the well, the top packer was near the surface, the packers were inflated to form a seal against the casing. The bottom 5 feet of the packer drop pipe was perforated to allow for communication between the tubing and the annulus of the packer assembly. The drop pipe extended through the wellhead and a high pressure/low volume pump was attached to the drop pipe to pressurize the test interval. A valve on the drop pipe at the surface was used to isolate the test interval once the planned test pressure was achieved.

An In-Situ LevelTROLL® pressure transducer with a data logger was installed at the well head and was connected to the packer assembly annulus interval via a National Pipe Thread adapter. The LevelTROLL was used to monitor and record pressure inside the well during the SAPT. To conduct the SAPT, water was pumped from a nearby well immediately prior to testing. Before the water was pumped into the test well, the water temperature was measured to ensure that it was similar to the ambient groundwater temperature of the test well to reduce the potential of differential temperature effects on the well casing. The SAPT for the Class III well was conducted by applying hydraulic pressure to the well casing and shutting in pressure between the packer and wellhead assembly, monitoring the shut-in pressure for a 30-minute period, then measuring the volume of water returned from the well casing after the pressure was released.

On 26 April 2018, the packer was installed to approximately 502 feet and the SAPT was conducted successfully three times. The USEPA SAPT form, a table of the data, and a chart of the data is provided in Appendix G.

Part II mechanical integrity is demonstrated by the cementing records included in this report (in accordance with Part II.E.3.ii.C of the UIC Permit) and will be demonstrated during operations by annular conductivity monitoring on the observation and multi-level sampling wells (in accordance with Part II.E.3.a.ii.A of the UIC Permit).

Cemented Interval	Cement Type	Calculated Grout Volume (cubic yards)	Installed Grout Volume (cubic yards)
Surface casing	Type V 21 sack neat cement slurry	2.6	4
Overburden casing	Type V 21 sack neat cement slurry	23.1	24.3
Well casing	Type V 21 sack neat cement slurry	16.1	13.3

On 27 November 2017, a cement bond log was run on the overburden casing. On 7 May 2018, a suite of logs was run over the entire length of the completed well to verify the grout seal; a summary of the logs completed to demonstrate cement bond are included in Appendix F.

The cement bond of the steel casing was evaluated by the geophysical contractor by calculating a bond index. The bond index based on the cement bond log was calculated to be an average of 82 percent over the cement grouted interval from 0 to 499 feet, this data is included on the summary log in Appendix G. A sonic log was also run in the steel casing and the results of the sonic log indicate a consistent density in the interval which supports the cement bond log data.

There is not a bond log tool designed to evaluate cement bond with FRP casing, so the cement interval with the FRP casing was evaluated using density logs. Based on the measured density of the cased interval no significant cement deficiencies were noted in the sonic data collected from the water table at approximately 240 to 489 feet, and no significant deficiencies were noted in the 4pi density data collected from 15 to 489 feet. There were some very localized, low density intervals identified in the density logs but they were insignificant, only extending 2 to 3 feet. A summary of the FRP cased data is included in the well completion summary in Appendix G.

VIII. Compatibility of Injected Waste

The Florence Copper Project is a Class III mineral extraction project and does not include the injection of any waste products of any kind. The injected fluid (lixiviant) is a carefully constituted in-situ copper recovery solution that will be recovered and recycled following injection.

The compatibility of the lixiviant was evaluated as part of the geochemical modeling completed by Florence Copper and summarized in the *Geochemical Evaluation to Forecast Composition of Process Solutions for In-Situ Copper Recovery Pilot Test Facility at Florence Copper, Florence Arizona* (Daniel B. Stephens Inc., 2014) which was included in Attachment H of the UIC Permit Application.

IX. Status of Corrective Action on Defective Wells in the Area of Review

There are not currently any defective wells in the AOR.

X. Maximum Pressures and Flow Rates for I-04

Maximum Operating Pressure	Maximum Flow (Injection)
104 PSI	60 gpm
Notes: *gpm = gallons per minutes* *psi = pounds per square inch*	

The maximum operating pressure was calculated using the permitted fracture gradient limit of 0.65 psi per foot and the estimated weight of the mature raffinate solution of 0.45 psi per foot. This well is an injection well used to inject solution and the permitted maximum injection flow rate is 60 gallons per minute (gpm).

XI. Well Development

Well I-04 was initially developed by the airlift method, followed by pumping. Development activities were completed by Hydro Resources using a workover rig. To purge drilling fluids and solids, the well was airlift developed from 12 to 17 April 2018 at depths ranging from 400 to 1,200 feet. During development, the airlift pump was turned on and off to surge the well. On 14 April 2018, approximately 33 gallons of chlorine were added to the well. The discharge was cloudy and light brown with minimal sand content at the end of the airlift development period.

To pump develop the well, a submersible pump was temporarily installed at approximately 1,160 feet on 17 April 2018. Pump development was conducted at approximately 60 to 65 gpm on 17 and 19 April 2018, during which time the submersible pump was raised to 900 feet and 600 feet and periodically turned off to surge the well. The discharge was visually clear throughout the pump development period and turbidity values were less than 5 Nephelometric Turbidity Units at the end of the development period. Well development forms are included in Appendix H.

XII. Well Completion

A well video survey was conducted on 17 April 2018; the video log report is included as Appendix I. The video log depths are presented in feet below the top of the casing and thus vary slightly from what is recorded; however, these values are the same with the correction for stick up.

The video log indicates the total depth reached was 1,200 feet (to the bottom of the casing).

A gyroscopic survey was also conducted on the completed well on 7 May 2018, and the results are included in Appendix I.

The surveyed location for well I-04 is as follows:

Northing (feet)	Easting (feet)	Measuring Point Elevation (feet amsl)
746131.37	847623.89	1479.91

***Notes**:*
Northing and easting locations provided in State Plane North American Datum 1983; vertical location provided in North American Vertical Datum 1988.
amsl = above mean sea level

XIII. Downhole Equipment

On 23 July 2018, the permanent equipment was installed in the well, including the following:

- Inflatable Packers International packer;
- 2-inch Schedule 120 threaded and coupled polyvinyl chloride column pipe with 316L stainless steel couplers from the packer to approximately 300 feet;
- 2-inch Schedule 40 threaded and coupled 316L stainless steel column pipe with 316L stainless steel couplers from approximately 350 feet to the wellhead;
- Pressure transducer in the annulus above the packer, and pressure transducer in communication with the zone below the packer through a feed-through port on the packer; and
- 1-inch nominal diameter sounding tube to 500 feet.

The type and depth of equipment installed in each well is not constrained by the UIC Permit or the Aquifer Protection Permit (APP). This information is provided in accordance with Section 2.7.4.3 of the APP. Operational considerations may require that the type and depth of equipment be changed in response to conditions observed during operations.

XIV. References

Brown and Caldwell, Inc., 2018. *PTF Mine Block Ambient Groundwater Concentrations and Initial Discharge Characterization of the Underground Workings*. Prepared for Florence Copper. August.

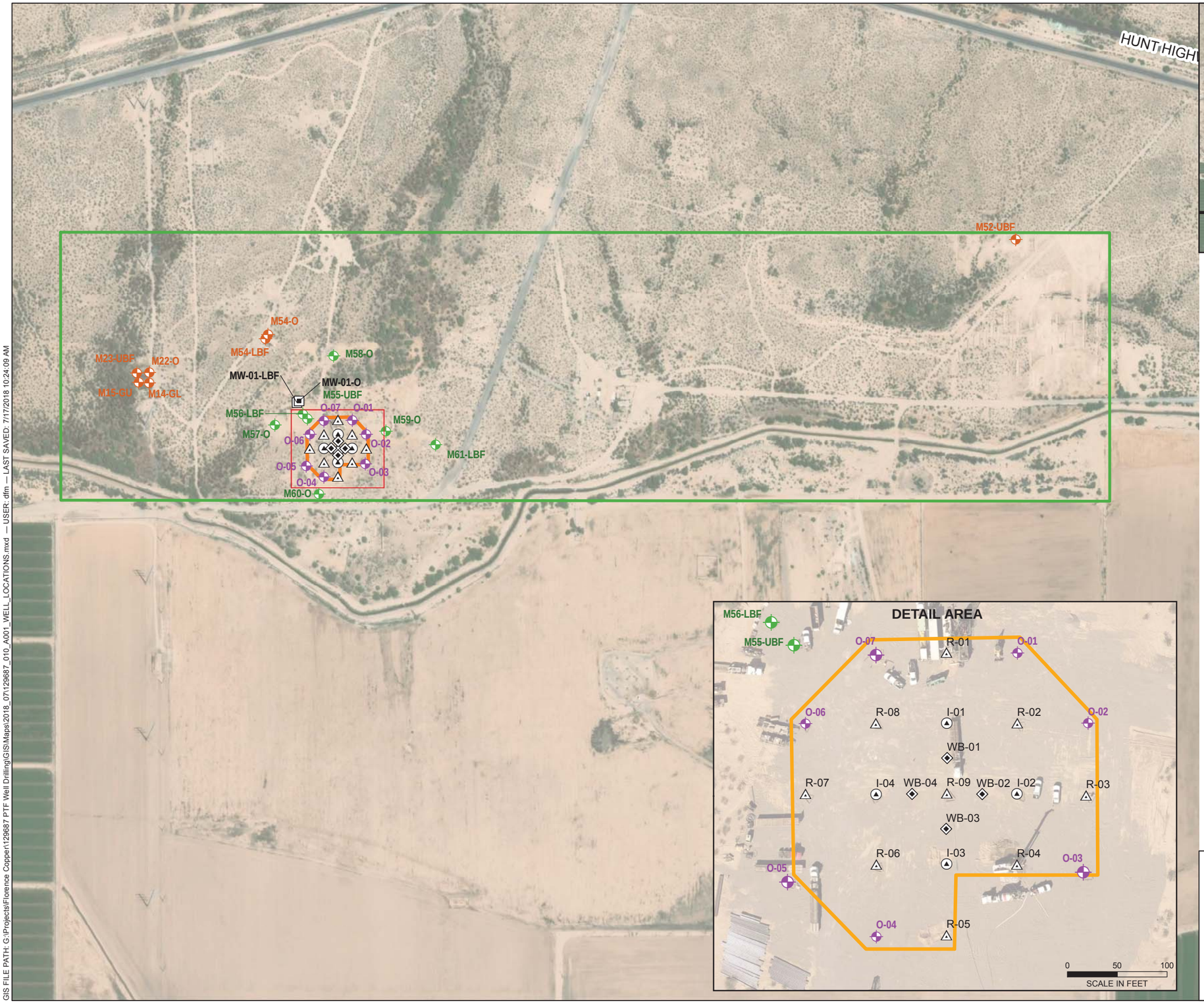
Daniel B. Stephens, Inc., 2014. *Geochemical Evaluation to Forecast Composition of Process Solutions for In-Situ Copper Recovery Pilot Test Facility at Florence Copper, Florence Arizona.* Prepared for Florence Copper. May.

Haley & Aldrich, Inc., 2017. *Well Specification: Drilling, Installation, and Testing of Class III Injection and Recovery Wells, Production Test Facility, Florence, Arizona*. Revised September 2017.

Enclosures:

- Figure 1 – Well Locations
- Figure 2 – Injection Well Head Detail
- Figure 3 – Geophysical Data and Lithologic Log
- Figure 4 – Well I-04 As-Built Diagram
- Appendix A – Arizona Department of Water Resources Well Registry Report
- Appendix B – Lithologic Log
- Appendix C – Chemical Characteristics of Formation Water
- Appendix D – Well Completion Documentation
- Appendix E – Geophysical Logs
- Appendix F – SAPT Documentation
- Appendix G – Cement Bond Log Summary
- Appendix H – Well Development Field Forms
- Appendix I – Well Video Log and Gyroscopic Survey Reports

FIGURES



0 1,250 2,500
SCALE IN FEET

LEGEND

- OBSERVATION WELL
- SUPPLEMENTAL MONITORING WELL
- POINT-OF-COMPLIANCE WELL

PTF WELL

- INJECTION
- RECOVERY
- WESTBAY WELL
- OPERATIONAL MONITORING
- PTF WELL FIELD
- STATE LAND LEASE

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: ESRI

N

0 500 1,000
SCALE IN FEET

HALEY ALDRICH

FLORENCE COPPER PROJECT
FLORENCE, ARIZONA

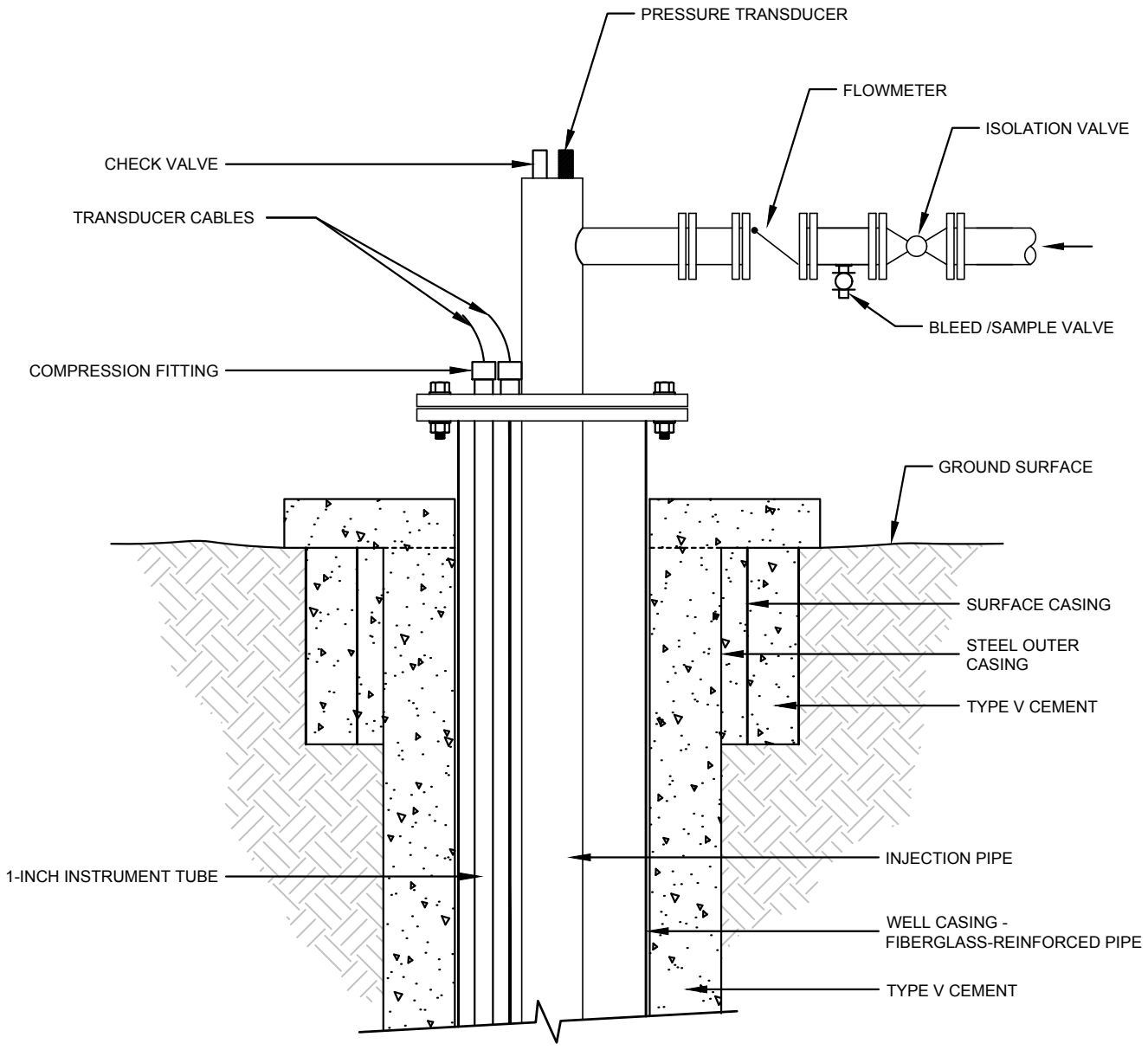
WELL LOCATIONS

FLORENCE COPPER INC.

AUGUST 2018

FIGURE 1

GIS FILE PATH: G:\Projects\Florence Copper\129687 PTF Well Drilling\GIS\Maps\2018_07\129687_010_A001_WELL_LOCATIONS.mxd — USER: dfm — LAST SAVED: 7/17/2018 10:24:09 AM



HALEY ALDRICH

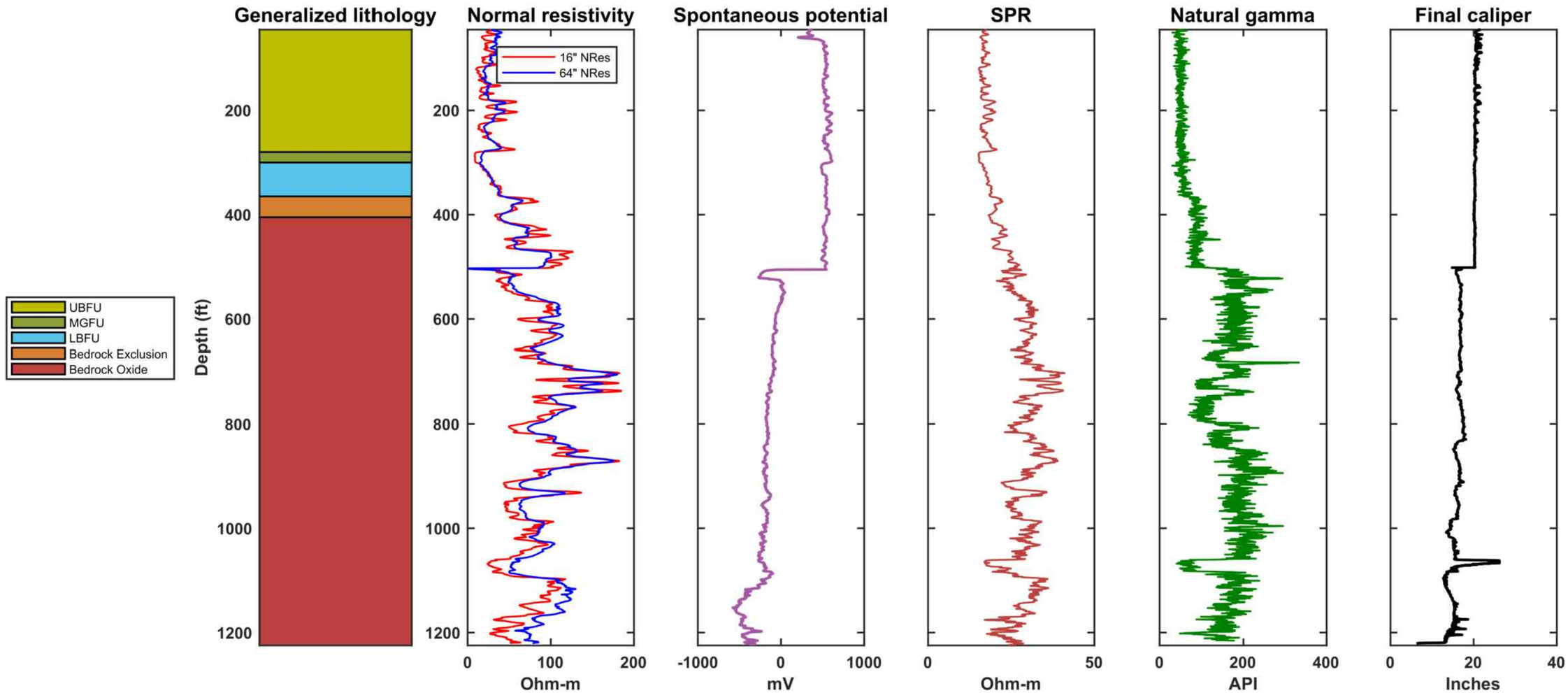
PRODUCTION TEST FACILITY
FLORENCE COPPER, INC.
FLORENCE, ARIZONA

INJECTION WELL HEAD DETAIL

FLORENCE COPPER INC.

SCALE: NOT TO SCALE
SEPTEMBER 2018

FIGURE 2

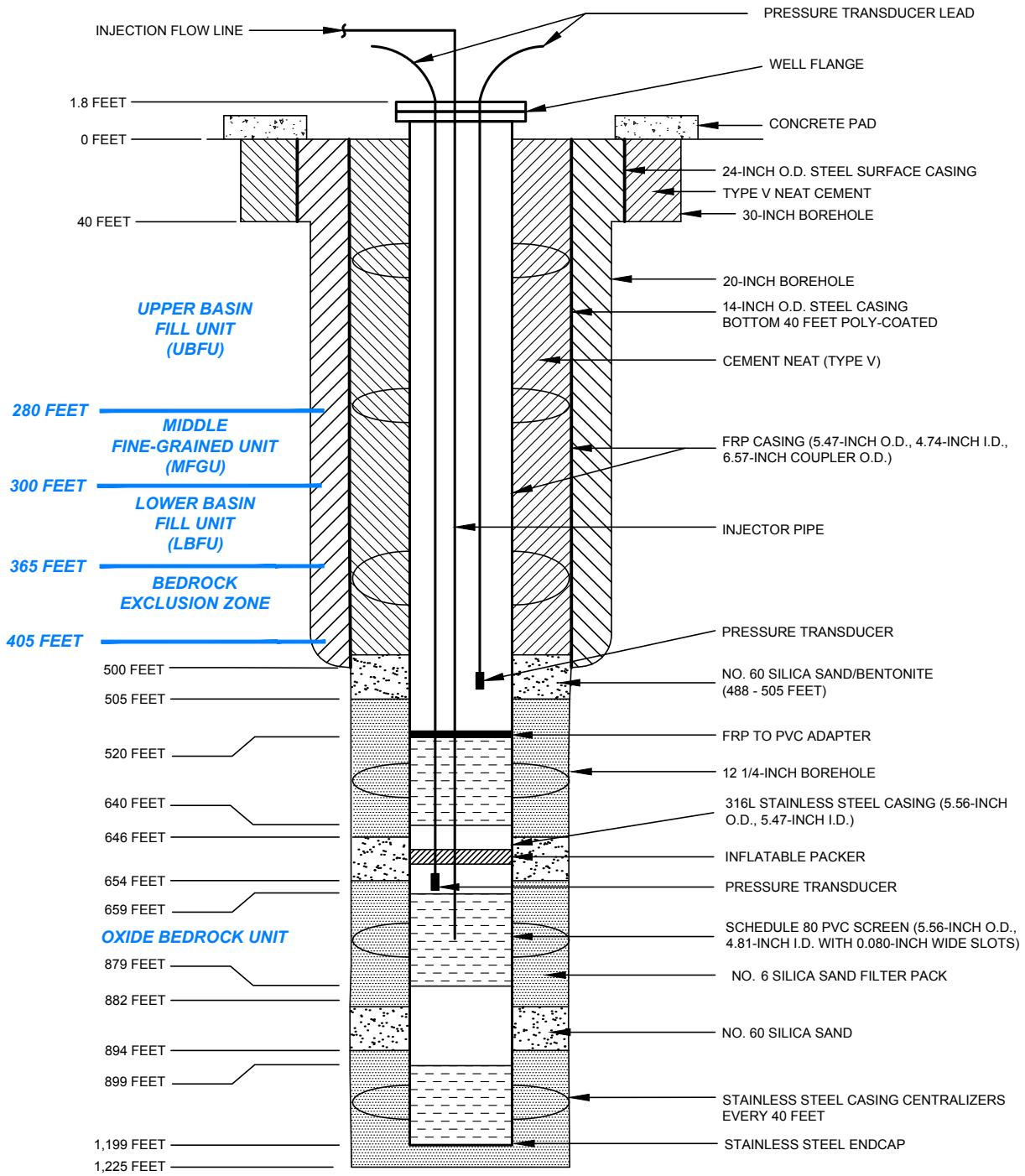


PRODUCTION TEST FACILITY
FLORENCE COPPER, INC.
FLORENCE, ARIZONA

INJECTION WELL I-04 GEOPHYSICAL DATA AND LITHOLOGIC LOG

SCALE: AS SHOWN
SEPTEMBER 2018

FIGURE 3



NOTES

1. WELL REGISTRATION NO.: 55-227966
2. CADASTRAL LOCATION: D(4-9) 28 CBD
3. MEASURING POINT ELEVATION: 1482.16 FEET AMSL
4. I.D. = INSIDE DIAMETER
5. O.D. = OUTSIDE DIAMETER
6. PVC = POLYVINYL CHLORIDE
7. FRP = FIBERGLASS REINFORCED PLASTIC
8. SOUNDING TUBE INSTALLED TO ~500 FEET

HALEY ALDRICH

PRODUCTION TEST FACILITY
FLORENCE COPPER, INC.
FLORENCE, ARIZONA

INJECTION WELL I-04 AS-BUILT DIAGRAM

FLORENCE COPPER

SCALE: NOT TO SCALE
SEPTEMBER 2018

FIGURE 4

APPENDIX A

Arizona Department of Water Resources Well Registry Report

Arizona Department of Water Resources
Water Management Division
P.O. Box 36020 Phoenix, Arizona 85067-6020
(602) 771-8627 • (602) 771-8690 fax
· www.azwater.gov ·

RECEIVED
AUG 20 2018
ADWR

Well Driller Report and Well Log

CJ

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK.

FILE NUMBER: D (4-9) 28 CBD
WELL REGISTRATION NUMBER: **55 -** 227966
PERMIT NUMBER (IF ISSUED):

SECTION 1. DRILLING AUTHORIZATION

Drilling Firm

Mail To:

NAME	DWR LICENSE NUMBER
Hydro Resources Inc.	816
ADDRESS	TELEPHONE NUMBER
13027 County Rd. 18 Unit C	(303) 857-7544
CITY / STATE / ZIP	FAX
Ft. Lupton, CO 80621	(303) 857-2826

SECTION 2. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Florence Copper Inc.

MAILING ADDRESS: 1575 W. Hunt Hwy

CITY / STATE / ZIP CODE: Florence, AZ 85132

CONTACT PERSON NAME AND TITLE: Ian Ream - Sr. Hydrologist

TELEPHONE NUMBER: (520) 374-3984 FAX:

WELL NAME (e.g., MW-1, PZ-3, Lot 25 Well, Smith Well, etc.): I - 04

Location of Well

WELL LOCATION ADDRESS (IF ANY):

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
4S	9E	28	SW ¼	NW ¼	SE ¼

LATITUDE			LONGITUDE		
33 ° Degrees	3 ' Minutes	0.71 "N Seconds	-111 ° Degrees	26 ' Minutes	5.51 "W Seconds

METHOD OF LATITUDE/LONGITUDE (CHECK ONE)
☒ *GPS: Hand-Held ☐ *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: 1492 Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE)
☒ *GPS: Hand-Held ☐ *GPS: Survey-Grade

*GEOGRAPHIC COORDINATE DATUM (CHECK ONE)
☒ NAD-83 ☐ Other *(please specify)*:

COUNTY: PINAL

ASSESSOR'S PARCEL ID NUMBER: BOOK | MAP | PARCEL

SECTION 3. WELL CONSTRUCTION DETAILS

Drill Method

CHECK ALL THAT APPLY
- ☐ Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☒ Mud Rotary
- ☒ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☐ Other *(please specify)*:

Method of Well Development

CHECK ALL THAT APPLY
- ☒ Airlift
- ☐ Bail
- ☐ Surge Block
- ☒ Surge Pump
- ☐ Other *(please specify)*:

Condition of Well

CHECK ONE
- ☒ Capped
- ☐ Pump Installed

Method of Sealing at Reduction Points

CHECK ONE
- ☐ None
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other *(please specify)*:

Construction Dates

DATE WELL CONSTRUCTION STARTED: 11/10/2017

DATE WELL CONSTRUCTION COMPLETED: 05/24/2018

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY:

DATE: 5/24/2018

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 227966

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Depth

DEPTH OF BORING	DEPTH OF COMPLETED WELL
1225 Feet Below Land Surface	1200 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
226 Feet Below Land Surface	05/07/2018	1 PM	☐ Valve ☐ Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)
0	40	30
40	488	20
488	1225	12.25

Installed Casing

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (T) STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T) BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	40	24.5	X				X						
0	488	14.5	X				X						
0	520	5.44				FRP	X						
520	640	5.56		X							X		.080
640	659	5.56		X			X						
659	879	5.56		X							X		.080
879	899	5.56		X			X						
899	1200	5.56		X							X		.080

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T) NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE GROUT	BENTONITE CHIPS	BENTONITE PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK SAND	FILTER PACK GRAVEL	FILTER PACK SIZE
0	40			X								
0	488			X								
488	505							X				
505	646									X		6-9
646	654							X				
654	882									X		6-9
882	894							X				
894	1225									X		6-9

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 227966

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE		Description	Check (T) every interval where water was encountered (if known)
FROM (feet)	TO (feet)	Describe material, grain size, color, etc.	
0	280	UPPER BASIN FILL UNIT	
280	300	MIDDLE FINE GRAINED UNIT	
300	365		
365	1225	BEDROCK OXIDE UNIT	

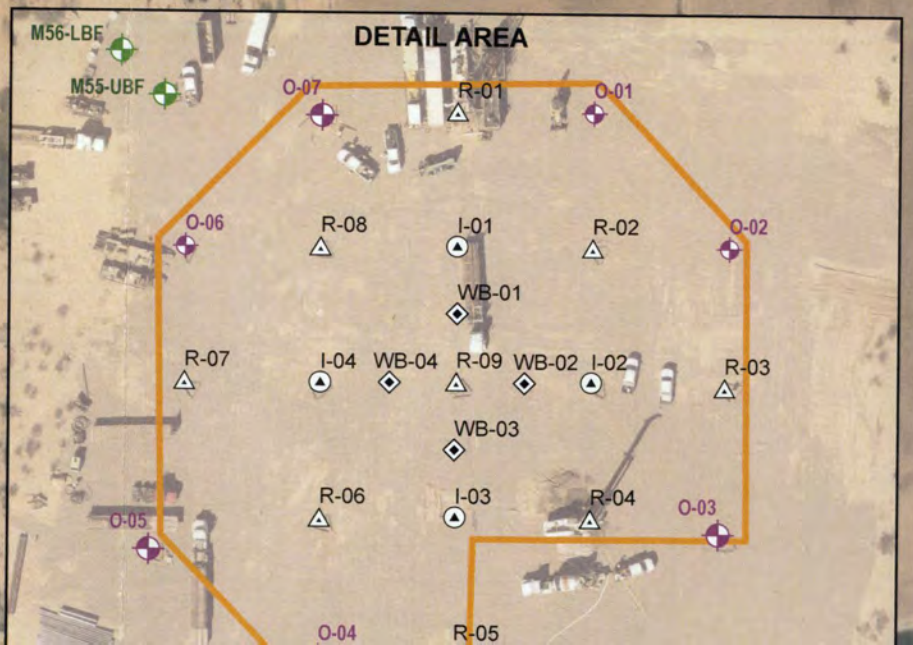
Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 227966

SECTION 6. WELL SITE PLAN

NAME OF WELL OWNER	COUNTY ASSESSOR'S PARCEL ID NUMBER		
Florence Copper Inc.	BOOK	MAP	PARCEL

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.



0 1,250 2,500
SCALE IN FEET

LEGEND

- OBSERVATION WELL
- SUPPLEMENTAL MONITORING
- POINT-OF-COMPLIANCE WELL

PTF WELL

- INJECTION
- RECOVERY
- WESTBAY WELL
- OPERATIONAL MONITORING
- PTF WELL FIELD
- STATE LAND LEASE

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: ESRI

N

0 500 1,000
SCALE IN FEET

HALEY ALDRICH

FLORENCE COPPER PROJECT
FLORENCE, ARIZONA

Run Date: 11/08/2017

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

	Well Reg.No	
Location D 4.0 9.0 28 C A C	55 - 227966	AMA PINAL AMA

Registered Name FLORENCE COPPER INC
1575 W HUNT HWY
FLORENCE AZ 85132

File Type NEW WELLS (INTENTS OR APPLICATIONS)
Application/Issue Date 10/17/2017

Owner OWNER
Driller No. 816
Driller Name HYDRO RESOURCES - ROCKY MOUNTAIN, INC.
Driller Phone 303-857-7540
County PINAL
Parcel No. 200-31-020
Intended Capacity GPM 0.00

Well Type ENV - INJECTION
SubBasin ELOY
Watershed UPPER GILA RIVER
Registered Water Uses INDUSTRIAL
Registered Well Uses RECHARGE
Discharge Method NO DISCHARGE METHOD LISTED
Power NO POWER CODE LISTED

Well Depth	0.00	**Case Diam**	0.00	**Tested Cap**	0.00
Pump Cap.	0.00	**Case Depth**	0.00	**CRT**	
Draw Down	0.00	**Water Level**	0.00	**Log**	
		Acres Irrig	0.00	**Finish**	NO CASING CODE LISTED

Contamination Site: NO - NOT IN ANY REMEDIAL ACTION SITE

Tribe: Not in a tribal zone

Comments

Current Action

10/17/2017 555 DRILLER & OWNER PACKETS MAILED
Action Comment: JRN

Action History

10/17/2017 550 DRILLING AUTHORITY ISSUED
Action Comment: JRN

10/17/2017 310 NOI RCVD TO DEEP/MOD/REPL A NON-EXEMPT WELL (S.T. PRE-CODE, 59)
Action Comment: JRN

ARIZONA DEPARTMENT OF WATER RESOURCES
WATER MANAGEMENT DIVISION
1110 West Washington Street, Suite 310, Phoenix, AZ 85007

THIS AUTHORIZATION SHALL BE IN THE POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-227966 **PERMIT NO.:** 59-562120.0005

AUTHORIZED DRILLER: Hydro Resources **LICENSE NO.:** 816

A PERMIT TO DRILL A NON-EXEMPT WELL INSIDE THE PINAL ACTIVE MANAGEMENT AREA HAS BEEN GRANTED TO:

WELL OWNER: Florence Copper 1575 W. Hunt Highway Florence, AZ 85132

The well(s) is/are to be located in the:

SW ¼ of the NE ¼ of the SW ¼ of Section 28 Township 4 South, Range 9 East

No. of well(s) in this project: 1

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 16th DAY OF October 2018

Stella Mirulla
GROUNDWATER PERMITTING AND WELLS

THE DRILLER MUST FILE A LOG OF THE WELL
WITHIN 30 DAYS OF COMPLETION OF DRILLING

GREAT SEAL OF THE STATE OF ARIZONA
DITAT DEUS
1912

DOUGLAS A. DUCEY
Governor

THOMAS BUSCHATZKE
Director

ARIZONA DEPARTMENT of WATER RESOURCES
1110 West Washington Street, Suite 310
Phoenix, Arizona 85007
602.771.8500
azwater.gov

November 7, 2017

Ian Ream
Florence Copper, Inc.
1575 W. Hunt Hwy
Florence, AZ 85132

RE: Notice of Intention to Drill a Non-Exempt Well Pursuant to a Non-General Industrial Use Permit
Permit No. 59-562120.0005, Well Registration No. 55-227966;
File No. D(4-9)28 CAC

Dear Mr. Ream:

The above-referenced Notice of Intention to Drill a Non-Exempt Well Pursuant to a Non-General Industrial Use Permit in an Active Management Area (AMA) has been approved. A copy of the Notice is enclosed for your records. The drilling card for the modification of the above referenced well has been forwarded to your well driller.

In the event that the location of the proposed well changes, you must notify the Department of Water Resources of the change in writing. A drill card with the correct proposed well location must be in possession of the driller before drilling may commence. If the proposed new well is to be more than 660 feet from the well that it is replacing, then you may be required to obtain a well permit.

Within 30 days of completion of the well, the well driller is required to furnish this Department with a complete and accurate log of the well. In addition, the well owner is required to submit the enclosed Completion Report within 30 days of installation of pump equipment.

Pursuant to the provisions of A.R.S. § 45-604, any person withdrawing groundwater from a well is required to use a water measuring device to record rates of withdrawal in order to provide or allow the computation of an annual volume of pumpage from the well. The total volume of pumpage from the well which is being replaced and the completed new well shall be reported on your Annual Water Withdrawal and Use Report for calendar year 2017. Subsequent annual reporting periods shall be from January 1 through December 31.

The Department has issued the authorization to drill this well pursuant to A.R.S. §§ 45-596 and 45-597 of the Groundwater Code. The legal nature of the water withdrawn from the well may be the subject of court action in the future as part of a determination of surface water rights in your area. If there are court proceedings that could affect your well, you will be notified and be given the opportunity to participate.

Under A.R.S. § 45-593, the person to whom a well is registered must notify the Department of a change in ownership, physical characteristics or any other data about the well in order to keep the well registration records current and accurate. Forms may be obtained by contacting the Department or online at http://www.azwater.gov.

If you have any questions regarding your permit or require any administrative corrections, please the Groundwater Permitting and Wells Unit at 602-771-8527.

Sincerely,

Jacob Nelson
Groundwater Permitting and Wells Unit

Enclosures

Memorandum

To:	Jacob Nelson, Groundwater Permitting and Wells
From:	Phil Whitmore, Groundwater Permitting and Wells
CC:	Jeff Tannler, Statewide AMA Director
Date:	10/24/2017
Subject:	Review of Application for a Permit to Drill or Operate Four Non-exempt Wells within an Active Management Area 59-562120 55-227963-6 D(4-9)28CAC & CBD Florence Copper, Inc.

ADWR has reviewed the above-referenced applications for four (4) permits to drill and operate non-exempt wells in the Pinal AMA. This hydrologist review is limited to conformance with well construction standards only.

The applicant proposes to inject 96.8 acre-feet per year from 4 new wells and add them to the applicant's Mineral Extraction Withdrawal permit (59-562120.0005).

Well Construction

The applicant proposes that all four (4) wells will be drilled and constructed in the same manner and drill depths. Each well will be 1210 feet deep with three (3) 200-foot screen intervals all open in the bedrock aquifer only. They will have 5-inch diameter inner casing constructed with PVC and include elements to reduce chemical corrosion.

The applications each included proposed well construction diagrams indicating that the outer annulus of the wells will be sealed from the surface to 20 feet below land surface and an inner annulus will be sealed to 490 below land surface. The estimated contact of the lower basin fill unit and the crystalline bedrock is approximately 490 feet deep.

The well diagrams did not indicate the height of well stick up and the applicant did not include a request for variance. However, if stick up is to be less than 1 foot above land surface a request for variance should be submitted to comply with Arizona Administrative Code R12-15-820.

Conclusion

We recommend issuing a permit to drill and operate all four (4) non-exempt wells in the proposed location, at the volume and well construction specifications stated in the application.

HALEY ALDRICH

Letter of Transmittal

Haley & Aldrich, Inc.
One Arizona Center
400 E. Van Buren St., Suite 545
Phoenix, AZ 85004

Date	16 October 2017
File Number	129687
From	Lauren Candreva

To	Arizona Department of Water Resources 1110 W. Washington Suite 310 Phoenix, Arizona 85007
Attention	Groundwater and Well Permitting Section
Subject	Florence Copper, Inc.

Copies	Date	Description
4	October 2017	Notice of Intent to Install a New Well

Transmitted via ☐ First class mail ☐ Overnight express ☒ Hand delivery ☐ Other

Remarks

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER PERMITTING AND WELLS UNIT
MAIL TO: P.O. BOX 36020, PHOENIX, ARIZONA 85067-6020
1110 W. Washington St. Suite 310, Phoenix, Arizona 85007-2952
Phone (602) 771-8527 Fax (602) 771-8590

NOTICE OF INTENTION TO DRILL A NON-EXEMPT WELL PURSUANT TO A GROUNDWATER WITHDRAWAL PERMIT (OTHER THAN A GENERAL INDUSTRIAL USE PERMIT) IN AN ACTIVE MANAGEMENT AREA

PLEASE READ GENERAL INSTRUCTIONS AND CONDITIONS ON REVERSE SIDE OF THIS FORM BEFORE COMPLETING. Section § 45-598, Arizona Revised Statutes provides: In an Active Management Area, prior to drilling a well, a person entitled to withdraw groundwater shall file a Notice of Intention to Drill with the Department. Pursuant to A.R.S. § 45-596 and A.A.C. R12-15-104, the filing fee for this application is $150.00.

1. **WELL/LAND LOCATION:**
   4S (Township) N/S 9E (Range) E/W 28 (Section)
   SE (10 Acre) ¼ NW (40 Acre) ¼ SW (160 Acre) ¼

2. **POSITION LOCATION OF THE WELL:**
   Latitude 33 ° 3 '0.69" N
   Longitude 111 ° 26 '5.53" W

3. **COUNTY** Pinal

4. **APPLICANT**
   Florence Copper, Inc.
   Name
   1575 W Hunt Hwy
   Mailing Address
   Florence AZ 85132
   City State Zip
   Telephone No. 520-374-3984

5. **OWNER OF THE LAND OF WELLSITE:**
   AZ State Land (Mineral Lease #11-026500)
   Name
   1616 W Adams Street
   Mailing Address
   Phoenix AZ 85007
   City State Zip
   Telephone No. 602-542-4631

6. **THIS NOTICE IS FILED BY:**
   Check one: ☐ Owner ☒ Lessee
   Ian Ream
   Name
   1575 W Hunt Hwy
   Mailing Address
   Florence AZ 85132
   City State Zip

7. **DESCRIPTION OF THE PROPOSEDWELL:**
   Diameter 5 Inches
   Depth 1200 Feet
   Type of Casing Steel/FRP/PVC

8. **ESTIMATE OF TOTAL ANNUAL PUMPAGE:**
   -96.8 (INJ) Acre-feet per Year

9. **PRINCIPAL USE OF WATER** (be specific):
   Mineral Extraction

10. **OTHER USES INTENDED** (be specific):
    None

11. **CONSTRUCTION WILL START:**
    September (Month) 2017 (Year)

FOR DEPARTMENT USE ONLY
File No. 11(4-9)28 CAC
Filed 11/7/17 By JRN
Input 11/7/17 By JRN

DUPLICATE
Mailed 11/7/17 By JRN
Registration 55- 227966
AMA/INA PINAL

12. **CLAIM OF ENTITLEMENT TO WITHDRAW GROUNDWATER:**
    Permit 59- 562120.0005

13. **DRILLING FIRM:**
    HydroResources
    Name
    13027 County Rd 18, Unit C
    Mailing Address
    Fort Lupton CO 80621
    City State Zip
    303-857-7540
    Telephone No.
    816
    DWR License Number
    A-4
    ROC License Category

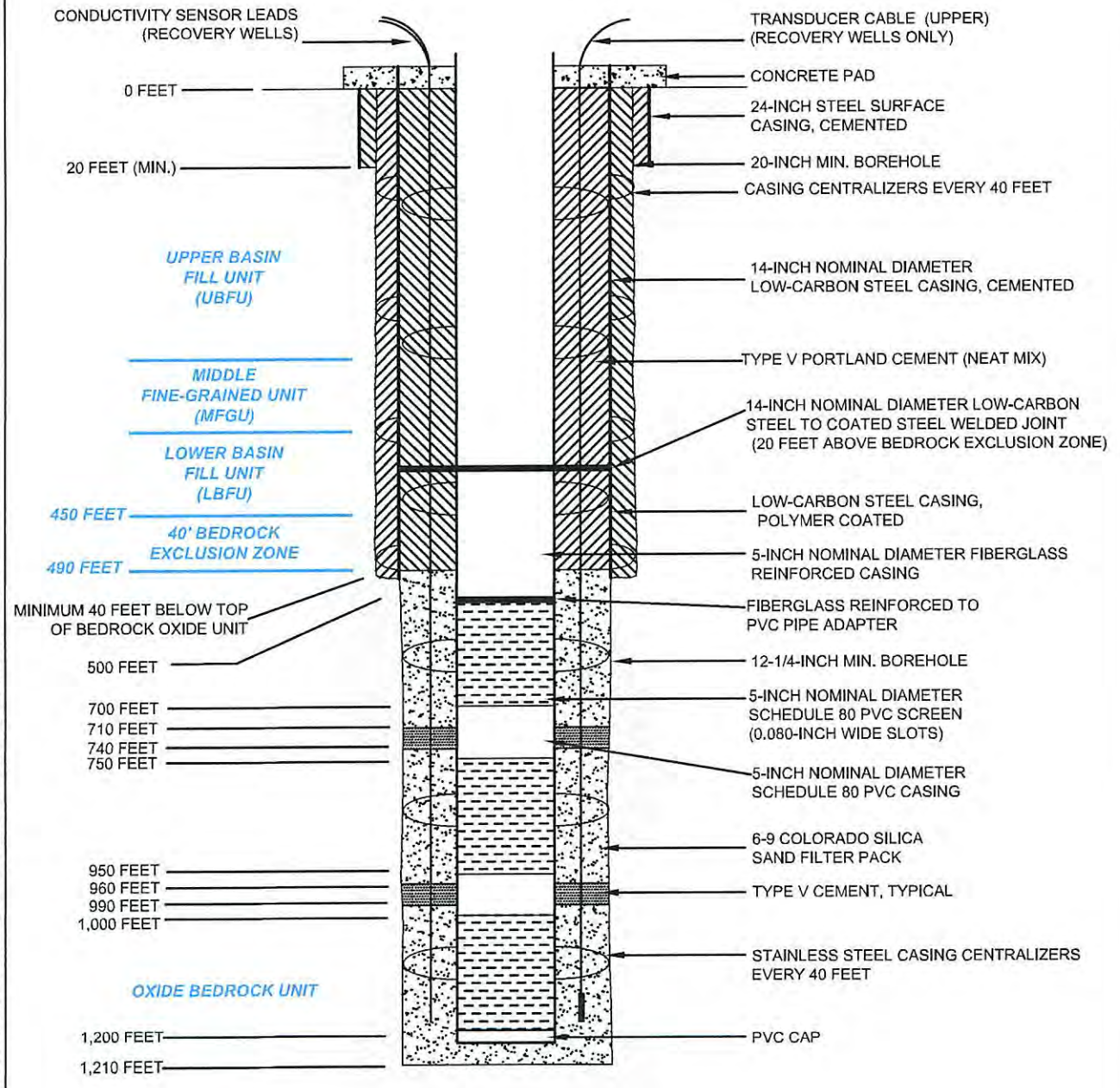
14. **Is the proposed well within 100 feet of a septic tank system, sewage area, landfill, hazardous waste facility or storage area of hazardous material or a petroleum storage area and tank?** ☐ Yes ☒ No

15. **Attach a detailed construction diagram of the proposed well design. The diagram should provide verification of consistency with minimum construction requirements. Specifically, the diagram should include an indication of the perforated interval location(s) in relationship to the expected water level; the depth and thickness of the surface seal, and grouting material used; whether the surface or conductor casing will extend above grade; and vault details, if specified.**

I state that this Notice is filed in compliance with Rules A.A.C. R12-15-809 and R12-15-816(F), and is complete and correct to the best of my knowledge and belief, and that I understand the conditions set forth on the reverse side of this form.

Ian Ream [signature] Senior Hydrogeologist 9-29-2017

Type or Print Name and **Signature** ☐ Land Owner ☒ Lessee of well site **Title** **Date**



G:\PROJECTS\CURIS RESOURCES\38706-CURIS FEASIBILITY\DRAWINGS\2014 UIC APP\FIGURES MIM-1 WELL CONST DGRM JUNE2015 UPDATE.DWG

HALEY ALDRICH

FLORENCE COPPER, INC.
FLORENCE, ARIZONA

I-04
WELL CONSTRUCTION DIAGRAM

FLORENCE COPPER INC.

SCALE: NOT TO SCALE

FIGURE 1

ARIZONA DEPARTMENT OF WATER RESOURCES

GROUNDWATER PERMITTING AND WELLS UNIT
1110 W. Washington St. Suite 310, Phoenix, Arizona 85007-2952
Phone (602) 771-8585 Fax (602) 771-8688

WELL CONSTRUCTION SUPPLEMENT (form DWR 55-90)

Well Registration Number 55- 227966

1. **Well Location:**

   SW (10AC) ¼ of the NW (40AC) ¼ of the SW (160AC) ¼, Sec. 28, Township 4S Range 9E.

2. **Position Location of the Well:**

   Latitude 33 ° 3 ' 0.69 " **Longitude** 111 ° 26 ' 5.53 "

   Datum: ✓ **NAD 83** • **NAD 27** • **Other:** _____

3. **County** PINAL.

4. **Date construction to start:** SEPTEMBER 2017.

5. **Time period well will remain in use:** 5 YEARS.

6. **Is pump equipment to be installed?** NO **If so, design pump capacity:** - 60 (INJ) **GPM.**

7. **Well construction plan:**

   a. **Drilling method (mud rotary, hollow-stem auger, etc.)** MUD ROTARY.

   b. **Borehole diameters** 30 20 **inches from** 0 40 **feet to** 40 490 **feet.**

      12.25 **inches from** 490 **feet to** 1210 **feet.**

   c. **Casing materials** STEEL/FIBERGLASS REINFORCED PLASTIC/PVC.

   d. **Method of well development (bail, air lift, surge, etc.)** AIRLIFT, SURGE.

   e. **Will surface or conductor casing extend above grade?** NO.

8. **Include a detailed construction diagram of the proposed well design. The diagram should verify consistency with minimum construction requirements specified in the Department's well construction rules found in Arizona Administrative Code (A.A.C.) R12-15-801 *et seq*. Specifically, the diagram should include borehole diameters; casing materials and diameters; perforation intervals; the expected water level; depth and thickness of the surface seal; proposed grouting materials; and the length that the surface or conductor casing will extend above grade, or vault details, if specified.**

   Pursuant to Arizona Revised Statutes (A.R.S.) § 45-594.B, all well construction, replacement, deepening and abandonment operations shall comply with the rules adopted pursuant to this section. Therefore, any existing well that is deepened or modified must be brought into compliance with minimum well construction standards specified above, if not already in compliance.

9. **Proposed materials and method of abandonment if well is to be abandoned after project is completed (Minimum requirements per A.A.C. R12-15-816):**

   _____

10. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility, storage area of hazardous material, or petroleum storage area or tank? _____Yes _X_No

11. Is this well to monitor existing contamination? ____Yes _X_No

Potential contamination?_____Yes _X_No If yes, please provide explanation:_____

_____

12. Name of Consulting firm, if any: HALEY & ALDRICH, INC.

400 E VAN BUREN STREET	PHOENIX	AZ	85004
Address	**City**	**State**	**Zip**

Contact Person: LAUREN CANDREVA Telephone Number: 602-760-2429

13. Drilling firm HYDRORESOURCES

DWR License Number: 816 ROC License Category: A-4

14. Special construction standards, if any, required pursuant to A.A.C. R12-15-821:_____

_____

I (we), _____ hereby affirm that all information provided in this application is true and correct to the best of my/our knowledge and belief.
(print name)

Signature of Applicant _____ Date 9-29-17

Transaction Receipt - Success

Arizona Water Resources
Arizona Water Resources
MID:347501639533
1700 W Washington St
Phoenix , AZ 85012
602-771-8454

10/17/2017 11:46AM
Remittance ID
Arizona101717144444278Nel
Transaction ID:
193090775

LAUREN A. CNADREVA
209 S. Marin Dr.
GILBERT, Arizona 85296
United States
Visa - 7664
Approval Code: 09392C

Sale
Amount: $600.00

55-227963-...966
N/A
Time Tracking
0
jnelson@azwater.gov

Cardmember acknowledges receipt of goods and/or services in the amount of the total shown hereon and agrees to perform the obligations set forth by the cardmember's agreement with the issuer.

Signature _____

click here to continue.

Printed: 10/17/2017 12:00:05 PM

Arizona Department of Water Resources

1110 West Washington Street, Suite 310
Phoenix AZ 85007

Customer:
LAUREN CANDREVA
209 S. MARIN DR.
GILBERT, AZ 85296

Receipt #: 18-54551
Office: MAIN OFFICE
Receipt Date: 10/17/2017
Sale Type: IN_PERSON
Cashier: WRJRN

Item No.	Function Code	AOBJ	Description	Ref ID	Qty	Unit Price	Ext Price
67488	122221	4439-TT	Notice of intention to drill a well other than a well described in subsection (A)(1)(h) of this Section	227966	1	150.00	150.00
					RECEIPT TOTAL:		**150.00**

Payment type: CREDIT CARD
Amount Paid: $150.00
Payment Received Date: 10/17/2017

Authorization 193090775

Notes: FROM TTA.

No refund without valid receipt

APPENDIX B

Lithologic Log

LITHOLOGIC LOG

I-04

Project	Production Test Facility, Florence, Arizona
Client	Florence Copper, Inc.
Contractor	Cascade Drilling LLC

File No. 129687
Sheet No. 1 of 15
Cadastral Location D (4-9) 28 CBD

Drilling Method	Conventional Mud Rotary	Land Surface Elevation	1479.21 feet, amsl	Start	15 March 2018
Borehole Diameter(s)	30/20/12.25 in.	Datum	State Plane NAD 83	Finish	30 March 2018
Rig Make & Model	Challenger 280	Location	N 746,131 E 847,624	H&A Rep.	C. Giusti

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION	COMMENTS
0		SM		**SILTY SAND with GRAVEL (0-10 feet)** Primarily fine to medium sand with ~25% fines and ~20% gravel up to 105mm. Sand is subangular to subrounded and gravel is subrounded. Fines are nonplastic, no toughness, low dry strength, and (7.5YR 4/4). **UBFU**	
5	1475				**Well Registry ID:** 55-227966 **Surface Completion:** Bolted Sealed Well Flange **Well casing stickup:** 1.45 feet als *COLOR IDENTIFICATION MADE WITH WET SAMPLES USING MUNSELL CHART*
10	1470	SW-SM	10	**WELL GRADED SAND with SILT (10-35 feet)** Primarily fine to coarse sand with ~10% fines and ~20% gravel up to 105mm. Sand is subangular to subrounded and gravel is subangular to rounded. Fines are nonplastic, no toughness, low dry strength, and (7.5YR 4/4). **UBFU**	
15	1465				
20	1460				
25	1455				
30	1450				
35	1445	SP-SC	35	**POORLY GRADED SAND with CLAY (35-40 feet)** Primarily fine sand with ~10% fines and ~5% gravel up to 40mm. Sand is subangular to subrounded and gravel is subangular. Fines have low-medium plasticity, low toughness, and medium dry strength. **UBFU**	
40	1440	SW	40	**WELL GRADED SAND (40-80 feet)** Primarily fine to coarse sand with ~5% fines and ~5% gravel up to 25mm. Sand is subrounded to angular and gravel is subangular to subrounded. Fines are nonplastic, no toughness, no dry strength, are red-brown (7.5YR 4/6), and weak reaction to HCL. **UBFU**	**Surface Casing:** 14-inch mild steel; 0 - 40 feet **Overburden Casing:** 14-inch mild steel; 0 - 500 feet **Well Casing:** Nominal 5-inch diameter Fiberglass Reinforced; -1.45 - 520 feet
45	1435				
50	1430				
55	1425				
60	1420				**Unit Intervals:** UBFU: 0 - 280 feet MGFU: 280 - 300 feet LBFU: 300 - 365 feet Oxide Bedrock: 365 - 1225 feet
65	1415				
70	1410				
75	1405				

NOTE: Lithologic descrptions, group symbols, and grain-size determinations based on the USCS visual-manual method (Haley & Aldrich OP2001A - Field Practice for Soil Identification and Description).

I-04

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION	
75					
80	1400	SP-SM	80	**POORLY GRADED SAND with SILT (80-95 feet)** Primarily fine sand with ~10% fines and trace gravel up to 12mm. Sand is subrounded to angular and gravel is subrounded. Fines have low plasticity, low toughness, low dry strength, are red-brown (7.5YR 5/4), and moderate reaction to HCL. **UBFU**	
85	1395				
90	1390				
95	1385	CH	95	**FAT CLAY with SAND (95-105 feet)** Primarily fines with ~25% sands and trace gravel up to 28mm. Sand is subrounded to angular and gravel is subrounded. Fines have high plasticity, high toughness, medium dry strength, are red-brown (7.5YR 4/3), and strong reaction to HCL. **UBFU**	**Seal:** Type V neat cement 0 - 488 feet Fine sand/bentonite 488 - 505 feet
100	1380				
105	1375	SM	105	**SILTY SAND (105-115 feet)** Primarily fine to coarse sand with ~20% fines and ~10% gravel up to 24mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have low plasticity, low toughness, low dry strength, are red-brown (7.5YR 5/4), and weak reaction to HCL. **UBFU**	
110	1370				
115	1365	CH	115	**FAT CLAY with SAND (115-130 feet)** Primarily fines with ~25% sands and trace gravel up to 19mm. Sand is subrounded to angular and gravel is subrounded. Fines have high plasticity, high toughness, high dry strength, are red-brown (7.5YR 4/5), and strong reaction to HCL. **UBFU**	
120	1360				
125	1355				
130	1350	SP-SM	130	**POORLY GRADED SAND with SILT (130-155 feet)** Primarily fine sand with ~20% fines and ~5% gravel up to 22mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have low plasticity, low toughness, low dry strength, are red-brown (7.5YR 5/4), and moderate reaction to HCL. **UBFU**	
135	1345				
140	1340				
145	1335				
150	1330				
155	1325	CH	155	**FAT CLAY with SAND (155-165 feet)** Primarily fines with ~20% sand up to 4mm. Sand is subrounded to angular. Fines have high plasticity, high toughness, high dry strength, are red-brown (7.5YR 5/4), and weak reaction to HCL. **UBFU**	
160	1320				

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
165	1315	SW-SC	165	**WELL GRADED SAND with CLAY and GRAVEL (165-205 feet)** Primarily coarse to fine sand with ~10% fines and ~15% gravel up to 20mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have high plasticity, high toughness, high dry strength, are red-brown (7.5YR 5/4), and weak reaction to HCL. **UBFU**
170	1310			
175	1305			
180	1300			
185	1295			
190	1290			
195	1285			
200	1280			
205	1275	CH	205	**SANDY FAT CLAY (205-235 feet)** Primarily fines with ~40% sands and trace gravel up to 15mm. Sand is subrounded to angular and gravel is subrounded. Fines have medium plasticity, medium toughness, high dry strength, are red-brown (7.5YR 5/4), and weak reaction to HCL. **UBFU**
210	1270			
215	1265			
220	1260			
225	1255			
230	1250			
235	1245	SM	235	**SILTY SAND with GRAVEL (235-255 feet)** Primarily medium to fine sand with ~20% fines and ~15% gravel up to 23mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have low plasticity, low toughness, low dry strength, are red-brown (7.5YR 4/4), and weak reaction to HCL. **UBFU**
240	1240			
245	1235			

NOTE: Lithologic descrptions, group symbols, and grain-size determinations based on the USCS visual-manual method (Haley & Aldrich OP2001A - Field Practice for Soil Identification and Description).

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
250	1230			
255	1225	SW-SM	255	**WELL GRADED SAND with SILT and GRAVEL (255-280 feet)** Primarily coarse to fine sand with ~10% fines and ~30% gravel up to 23mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have low plasticity, low toughness, low dry strength, are red-brown (7.5YR 5/4), and weak reaction to HCL. **UBFU**
260	1220			
265	1215			
270	1210			
275	1205			
280	1200	CH	280	**FAT CLAY (280-300 feet)** Primarily fines that have high plasticity, high toughness, high dry strength, are red-brown (7.5YR 5/6), and moderate reaction to HCL. **MGFU**
285	1195			
290	1190			
295	1185			
300	1180	SC	300	**CLAYEY SAND with GRAVEL (300-320 feet)** Primarily fine to coarse sand with ~20% fines and ~15% gravel up to 18mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have medium plasticity, medium toughness, medium dry strength, are red-brown (7.5YR 4/6), and moderate reaction to HCL. **LBFU**
305	1175			
310	1170			
315	1165			
320	1160	SW-SC	320	**WELL GRADED SAND with SILT and GRAVEL (320-365 feet)** Primarily coarse to fine sand with ~10% fines and ~20% gravel up to 24mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have low plasticity, low toughness, low dry strength, are red-brown (7.5YR 4/4), and moderate reaction to HCL. **LBFU**
325	1155			
330	1150			
335	1145			

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
340	1140			
345	1135			
350	1130			
355	1125			
360	1120			
365	1115		365	**QUARTZ MONZONITE (365-505 feet)** Consists of quartz at approximately 35%, potassium feldspars at approximately 35%, plagioclase at approximately 25%, and biotite at approximatley 5%. Cu minerals present at 365'-375', 380'-410', and ~415'.
370	1110			
375	1105			
380	1100			
385	1095			
390	1090			
395	1085			
400	1080			
405	1075			
410	1070			
415	1065			
420	1060		422	

NOTE: Lithologic descrptions, group symbols, and grain-size determinations based on the USCS visual-manual method (Haley & Aldrich OP2001A - Field Practice for Soil Identification and Description).

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION	
425	1055			**QUARTZ MONZONITE (365-505 feet)** Continued	
430	1050				**Filter Pack:** No. 60 Silica Sand 646 - 654, 882 - 894 feet **Thread Adapter:** Stainless Steel, SCH 80 F480 PVC to API; 520 feet
435	1045				
440	1040				
445	1035				
450	1030				
455	1025				
460	1020				
465	1015				
470	1010				
475	1005				
480	1000				
485	995				
490	990				**Well Screen:** Nominal 5-inch diameter, SCH 80 PVC Screen (0.080-inch slots); 520 - 640, 660 - 880, 899 - 1199 feet
495	985				
500	980				
505	975		505	**QUARTZ MONZONITE (505-710 feet)** Consists of quartz at approximately 35%, potassium feldspars at approximately 35%, plagioclase at approximately 25%, and biotite at approximatley 5%.	

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
510	970		509	**QUARTZ MONZONITE (505-710 feet)** Continued
515	965			
520	960			
525	955			
530	950			
535	945			
540	940			
545	935			
550	930			
555	925			
560	920			
565	915			
570	910			
575	905			
580	900			
585	895			
590	890			
595	885			

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
			596	**QUARTZ MONZONITE (505-710 feet)** Continued
600	880			
605	875			
610	870			
615	865			
620	860			
625	855			
630	850			
635	845			
640	840			
645	835			
650	830			
655	825			
660	820			
665	815			
670	810			
675	805			
680	800			

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
685	795		683	
690	790			
695	785			
700	780			
705	775			
710	770			**GRANODIORITE (710-735 feet)** Contains mostly plagioclase in a gray aphanitic matrix with biotite crystals composing approximately 10%.
715	765			
720	760			
725	755			
730	750			
735	745		735	**QUARTZ MONZONITE (735-740 feet)** Consists of quartz at approximately 35%, potassium feldspars at approximately 35%, plagioclase at approximately 25%, and biotite at approximatley 5%.
740	740		740	**GRANODIORITE (740-750 feet)** Contains mostly plagioclase in a gray aphanitic matrix with biotite crystals composing approximately 10%.
745	735			
750	730		750	**QUARTZ MONZONITE (750-790 feet)** Consists of quartz at approximately 35%, potassium feldspars at approximately 35%, plagioclase at approximately 25%, and biotite at approximatley 5%.
755	725			
760	720			
765	715			
	710			

NOTE: Lithologic descrptions, group symbols, and grain-size determinations based on the USCS visual-manual method (Haley & Aldrich OP2001A - Field Practice for Soil Identification and Description).

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
770				
775	705			
780	700			
785	695			
790	690		790	**GRANODIORITE (790-795 feet)** Contains mostly plagioclase in a gray aphanitic matrix with biotite crystals composing approximately 10%.
795	685			**QUARTZ MONZONITE (795-1200 feet)** Consists of quartz at approximately 35%, potassium feldspars at approximately 35%, plagioclase at approximately 25%, and biotite at approximatley 5%.
800	680			
805	675			
810	670			
815	665			
820	660			
825	655			
830	650			
835	645			
840	640			
845	635			
850	630			
855	625		856	

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
860	620			**QUARTZ MONZONITE (795-1200 feet)** Continued
865	615			
870	610			
875	605			
880	600			
885	595			
890	590			
895	585			
900	580			
905	575			
910	570			
915	565			
920	560			
925	555			
930	550			
935	545			
940	540			
			943	

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
945	535			**QUARTZ MONZONITE (795-1200 feet)** Continued
950	530			
955	525			
960	520			
965	515			
970	510			
975	505			
980	500			
985	495			
990	490			
995	485			
1000	480			
1005	475			
1010	470			
1015	465			
1020	460			
1025	455			
	450			

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
1030			1030	**QUARTZ MONZONITE (795-1200 feet)** Continued
1035	445			
1040	440			
1045	435			
1050	430			
1055	425			
1060	420			
1065	415			
1070	410			
1075	405			
1080	400			
1085	395			
1090	390			
1095	385			
1100	380			
1105	375			
1110	370			
1115	365			
			1116	

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
1120	360			
1125	355			
1130	350			
1135	345			
1140	340			
1145	335			
1150	330			
1155	325			
1160	320			
1165	315			
1170	310			
1175	305			
1180	300			
1185	295			
1190	290			
1195	285			
1200	280			**<u>DIABASE</u> (1200-1225 feet)** Dark gray to black igneous rock.

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION	
1205	275		1204	**DIABASE (1200-1225 feet)** Continued	
1210	270				
1215	265				
1220	260				
1225	255		1225		**Total Borehole Depth:** Driller = 1225 feet; Geophysical Logging = 1225 feet

APPENDIX C

Chemical Characteristics of Formation Water

May 23, 2018

Barbara Sylvester
Brown & Caldwell
201 E. Washington Suite 500
Phoenix, AZ 85004

TEL (602) 567-3894
FAX -

Work Order No.: 18D0619
Order Name: Florence Copper

RE: PTF

Dear Barbara Sylvester,

Turner Laboratories, Inc. received 2 sample(s) on 04/25/2018 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Kevin Brim
Project Manager

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Date Received: 04/25/2018

Order: Florence Copper

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
18D0619-01	R-09	Ground Water	04/23/2018 1555
18D0619-02	TB	Ground Water	04/25/2018 0000

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Date Received: 04/25/2018

Case Narrative

The 8015D analysis was performed by TestAmerica Laboratories, Inc. in Phoenix, AZ.

The radiochemistry analysis was performed by Radiation Safety Engineering, Inc. in Chandler, AZ.

D5	Minimum Reporting Limit (MRL) is adjusted due to sample dilution; analyte was non-detect in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS/LCSD recovery was acceptable.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor
PRL	Project Reporting Limit

Turner Laboratories, Inc.

Date: 05/23/2018

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Lab Sample ID: 18D0619-01

Client Sample ID: R-09
Collection Date/Time: 04/23/2018 1555
Matrix: Ground Water
Order Name: Florence Copper

Analyses	Result	PRL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
ICP Dissolved Metals-E 200.7 (4.4)									
Calcium	140		4.0	M3	mg/L	1	04/27/2018 1440	05/04/2018 1150	MH
Iron	ND		0.30		mg/L	1	04/27/2018 1440	05/04/2018 1150	MH
Magnesium	27		3.0		mg/L	1	04/27/2018 1440	05/04/2018 1150	MH
Potassium	6.8		5.0		mg/L	1	04/27/2018 1440	05/04/2018 1150	MH
Sodium	170		5.0	M3	mg/L	1	04/27/2018 1440	05/04/2018 1150	MH
ICP/MS Dissolved Metals-E 200.8 (5.4)									
Aluminum	ND		0.0800	D5	mg/L	2	04/27/2018 1440	05/07/2018 1139	MH
Antimony	ND		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Arsenic	0.0016		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Barium	0.071		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Beryllium	ND		0.00050	D5	mg/L	2	04/27/2018 1440	05/07/2018 1139	MH
Cadmium	ND		0.00025		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Chromium	0.0051		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Cobalt	ND		0.00025		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Copper	0.011		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Lead	ND		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Manganese	0.0020		0.00025		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Nickel	0.0033		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Selenium	ND		0.0025		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Thallium	ND		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Zinc	ND		0.040		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
CVAA Dissolved Mercury-E 245.1									
Mercury	ND		0.0010		mg/L	1	04/26/2018 0955	04/26/2018 1639	MH
pH-E150.1									
pH (pH Units)	7.8			H5	-	1	04/26/2018 1615	04/26/2018 1616	AP
Temperature (°C)	22			H5	-	1	04/26/2018 1615	04/26/2018 1616	AP
ICP/MS Total Metals-E200.8 (5.4)									
Uranium	0.016		0.00050		mg/L	1	04/27/2018 1230	04/30/2018 1348	MH

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Lab Sample ID: 18D0619-01

Client Sample ID: R-09
Collection Date/Time: 04/23/2018 1555
Matrix: Ground Water
Order Name: Florence Copper

Analyses	Result	PRL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Chloride	310		25		mg/L	25	04/26/2018 1225	04/26/2018 1415	AP
Fluoride	ND		0.50		mg/L	1	04/25/2018 1208	04/25/2018 1544	AP
Nitrogen, Nitrate (As N)	8.8		0.50		mg/L	1	04/25/2018 1208	04/25/2018 1544	AP
Nitrogen, Nitrite (As N)	ND		0.10		mg/L	1	04/25/2018 1208	04/25/2018 1544	AP
Sulfate	190		130		mg/L	25	04/26/2018 1225	04/26/2018 1415	AP
Cyanide-E335.4									
Cyanide	ND		0.10		mg/L	1	04/26/2018 0845	04/30/2018 1545	AP
Alkalinity-SM2320B									
Alkalinity, Bicarbonate (As CaCO3)	150		2.0		mg/L	1	05/03/2018 1030	05/03/2018 1210	EJ
Alkalinity, Carbonate (As CaCO3)	ND		2.0		mg/L	1	05/03/2018 1030	05/03/2018 1210	EJ
Alkalinity, Hydroxide (As CaCO3)	ND		2.0		mg/L	1	05/03/2018 1030	05/03/2018 1210	EJ
Alkalinity, Phenolphthalein (As CaCO3)	ND		2.0		mg/L	1	05/03/2018 1030	05/03/2018 1210	EJ
Alkalinity, Total (As CaCO3)	150		2.0		mg/L	1	05/03/2018 1030	05/03/2018 1210	EJ
Specific Conductance-SM2510 B									
Conductivity	1700		0.20		µmhos/cm	2	05/09/2018 1315	05/09/2018 1330	AP
Total Dissolved Solids (Residue, Filterable)-SM2540 C									
Total Dissolved Solids (Residue, Filterable)	1000		20		mg/L	1	04/26/2018 0826	05/01/2018 1600	EJ
Volatile Organic Compounds by GC/MS-SW8260B									
Benzene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 1943	KP
Carbon disulfide	ND		2.0		ug/L	1	05/07/2018 1824	05/07/2018 1943	KP
Ethylbenzene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 1943	KP
Toluene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 1943	KP
Xylenes, Total	ND		1.5		ug/L	1	05/07/2018 1824	05/07/2018 1943	KP
Surr: 4-Bromofluorobenzene	*95*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 1943*	*KP*
Surr: Dibromofluoromethane	*101*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 1943*	*KP*
Surr: Toluene-d8	*77*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 1943*	*KP*

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Lab Sample ID: 18D0619-02

Client Sample ID: TB
Collection Date/Time: 04/25/2018 0000
Matrix: Ground Water
Order Name: Florence Copper

Analyses	Result	PRL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Volatile Organic Compounds by GC/MS-SW8260B									
Benzene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 2344	KP
Carbon disulfide	ND		2.0		ug/L	1	05/07/2018 1824	05/07/2018 2344	KP
Ethylbenzene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 2344	KP
Toluene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 2344	KP
Xylenes, Total	ND		1.5		ug/L	1	05/07/2018 1824	05/07/2018 2344	KP
Surr: 4-Bromofluorobenzene	*101*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 2344*	*KP*
Surr: Dibromofluoromethane	*110*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 2344*	*KP*
Surr: Toluene-d8	*103*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 2344*	*KP*

Client: Brown & Caldwell
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QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1804269 - E 245.1										
Blank (1804269-BLK1)				Prepared & Analyzed: 04/26/2018						
Mercury	ND	0.0010	mg/L							
LCS (1804269-BS1)				Prepared & Analyzed: 04/26/2018						
Mercury	0.0049	0.0010	mg/L	0.005000		98	85-115			
LCS Dup (1804269-BSD1)				Prepared & Analyzed: 04/26/2018						
Mercury	0.0048	0.0010	mg/L	0.005000		95	85-115	2	20	
Matrix Spike (1804269-MS1)		**Source: 18D0394-01**		Prepared & Analyzed: 04/26/2018						
Mercury	0.0050	0.0010	mg/L	0.005000	0.00020	97	85-115			
Matrix Spike Dup (1804269-MSD1)		**Source: 18D0394-01**		Prepared & Analyzed: 04/26/2018						
Mercury	0.0050	0.0010	mg/L	0.005000	0.00020	96	85-115	1	20	
Batch 1804292 - E200.8 (5.4)										
Blank (1804292-BLK1)				Prepared & Analyzed: 04/30/2018						
Uranium	ND	0.00050	mg/L							
LCS (1804292-BS1)				Prepared & Analyzed: 04/30/2018						
Uranium	0.046	0.00050	mg/L	0.05000		92	85-115			
LCS Dup (1804292-BSD1)				Prepared & Analyzed: 04/30/2018						
Uranium	0.046	0.00050	mg/L	0.05000		92	85-115	0.2	20	
Matrix Spike (1804292-MS1)		**Source: 18D0614-01**		Prepared & Analyzed: 04/30/2018						
Uranium	0.051	0.00050	mg/L	0.05000	0.0015	99	70-130			
Batch 1805051 - E 200.7 (4.4)										
Blank (1805051-BLK1)				Prepared & Analyzed: 05/04/2018						
Calcium	ND	4.0	mg/L							
Iron	ND	0.30	mg/L							
Magnesium	ND	3.0	mg/L							
Potassium	ND	5.0	mg/L							
Sodium	ND	5.0	mg/L							
LCS (1805051-BS1)				Prepared & Analyzed: 05/04/2018						
Calcium	11	4.0	mg/L	10.00		109	85-115			
Iron	1.0	0.30	mg/L	1.000		104	85-115			
Magnesium	10	3.0	mg/L	10.00		105	85-115			
Potassium	10	5.0	mg/L	10.00		105	85-115			
Sodium	10	5.0	mg/L	10.00		105	85-115			
LCS Dup (1805051-BSD1)				Prepared & Analyzed: 05/04/2018						
Calcium	11	4.0	mg/L	10.00		110	85-115	1	20	
Iron	1.0	0.30	mg/L	1.000		105	85-115	0.5	20	
Magnesium	10	3.0	mg/L	10.00		105	85-115	0.06	20	
Potassium	10	5.0	mg/L	10.00		105	85-115	0.05	20	
Sodium	11	5.0	mg/L	10.00		109	85-115	4	20	

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QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1805051 - E 200.7 (4.4)										
Matrix Spike (1805051-MS1)	**Source: 18D0619-01**			Prepared & Analyzed: 05/04/2018						
Calcium	150	4.0	mg/L	10.00	140	59	70-130			M3
Iron	1.1	0.30	mg/L	1.000	0.028	105	70-130			
Magnesium	38	3.0	mg/L	10.00	27	108	70-130			
Potassium	17	5.0	mg/L	10.00	6.8	105	70-130			
Sodium	170	5.0	mg/L	10.00	170	30	70-130			M3
Matrix Spike (1805051-MS2)	**Source: 18E0021-01**			Prepared & Analyzed: 05/04/2018						
Calcium	64	4.0	mg/L	10.00	54	103	70-130			
Iron	1.0	0.30	mg/L	1.000	0.0060	101	70-130			
Magnesium	21	3.0	mg/L	10.00	11	99	70-130			
Potassium	15	5.0	mg/L	10.00	4.7	104	70-130			
Sodium	99	5.0	mg/L	10.00	90	87	70-130			
Batch 1805069 - E 200.8 (5.4)										
Blank (1805069-BLK1)				Prepared & Analyzed: 05/07/2018						
Aluminum	ND	0.0400	mg/L							
Antimony	ND	0.00050	mg/L							
Arsenic	ND	0.00050	mg/L							
Barium	ND	0.00050	mg/L							
Beryllium	ND	0.00025	mg/L							
Cadmium	ND	0.00025	mg/L							
Chromium	ND	0.00050	mg/L							
Cobalt	ND	0.00025	mg/L							
Copper	ND	0.00050	mg/L							
Lead	ND	0.00050	mg/L							
Manganese	ND	0.00025	mg/L							
Nickel	ND	0.00050	mg/L							
Selenium	ND	0.0025	mg/L							
Thallium	ND	0.00050	mg/L							
Zinc	ND	0.040	mg/L							
LCS (1805069-BS1)				Prepared & Analyzed: 05/07/2018						
Aluminum	0.104	0.0400	mg/L	0.1000		104	85-115			
Antimony	0.048	0.00050	mg/L	0.05000		96	85-115			
Arsenic	0.050	0.00050	mg/L	0.05000		100	85-115			
Barium	0.050	0.00050	mg/L	0.05000		100	85-115			
Beryllium	0.049	0.00025	mg/L	0.05000		97	85-115			
Cadmium	0.050	0.00025	mg/L	0.05000		100	85-115			
Chromium	0.051	0.00050	mg/L	0.05000		102	85-115			
Cobalt	0.051	0.00025	mg/L	0.05000		101	85-115			
Copper	0.051	0.00050	mg/L	0.05000		103	85-115			
Lead	0.049	0.00050	mg/L	0.05000		98	85-115			
Manganese	0.050	0.00025	mg/L	0.05000		101	85-115			
Nickel	0.051	0.00050	mg/L	0.05000		102	85-115			
Selenium	0.051	0.0025	mg/L	0.05000		103	85-115			
Thallium	0.050	0.00050	mg/L	0.05000		101	85-115			
Zinc	0.10	0.040	mg/L	0.1000		101	85-115			

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QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1805069 - E 200.8 (5.4)										
LCS Dup (1805069-BSD1)				Prepared & Analyzed: 05/07/2018						
Aluminum	0.115	0.0400	mg/L	0.1000		115	85-115	10	20	
Antimony	0.048	0.00050	mg/L	0.05000		96	85-115	0.7	20	
Arsenic	0.050	0.00050	mg/L	0.05000		101	85-115	0.8	20	
Barium	0.051	0.00050	mg/L	0.05000		102	85-115	1	20	
Beryllium	0.049	0.00025	mg/L	0.05000		97	85-115	0.2	20	
Cadmium	0.050	0.00025	mg/L	0.05000		100	85-115	0.2	20	
Chromium	0.051	0.00050	mg/L	0.05000		102	85-115	0.4	20	
Cobalt	0.050	0.00025	mg/L	0.05000		101	85-115	0.5	20	
Copper	0.052	0.00050	mg/L	0.05000		105	85-115	2	20	
Lead	0.049	0.00050	mg/L	0.05000		98	85-115	0.1	20	
Manganese	0.050	0.00025	mg/L	0.05000		101	85-115	0.09	20	
Nickel	0.051	0.00050	mg/L	0.05000		103	85-115	0.8	20	
Selenium	0.052	0.0025	mg/L	0.05000		104	85-115	2	20	
Thallium	0.050	0.00050	mg/L	0.05000		101	85-115	0.06	20	
Zinc	0.10	0.040	mg/L	0.1000		104	85-115	3	20	
Matrix Spike (1805069-MS1)		**Source: 18D0693-01**		Prepared & Analyzed: 05/07/2018						
Aluminum	0.239	0.0400	mg/L	0.1000	0.166	74	70-130			
Antimony	0.045	0.00050	mg/L	0.05000	0.00024	90	70-130			
Arsenic	0.056	0.00050	mg/L	0.05000	0.0035	104	70-130			
Barium	0.16	0.00050	mg/L	0.05000	0.12	94	70-130			
Beryllium	0.045	0.00025	mg/L	0.05000	0.000029	90	70-130			
Cadmium	0.047	0.00025	mg/L	0.05000	ND	94	70-130			
Chromium	0.049	0.00050	mg/L	0.05000	0.00052	98	70-130			
Cobalt	0.048	0.00025	mg/L	0.05000	0.00097	95	70-130			
Copper	0.051	0.00050	mg/L	0.05000	0.0020	98	70-130			
Lead	0.047	0.00050	mg/L	0.05000	0.00016	94	70-130			
Manganese	0.054	0.00025	mg/L	0.05000	0.0075	94	70-130			
Nickel	0.049	0.00050	mg/L	0.05000	0.0018	94	70-130			
Selenium	0.057	0.0025	mg/L	0.05000	ND	114	70-130			
Thallium	0.048	0.00050	mg/L	0.05000	0.000038	96	70-130			
Zinc	0.11	0.040	mg/L	0.1000	ND	109	70-130			

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QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1804261 - SM2540 C										
Duplicate (1804261-DUP1)		**Source: 18D0606-01**		Prepared: 04/26/2018 Analyzed: 04/27/2018						
Total Dissolved Solids (Residue, Filterable)	630	20	mg/L		630			0.3	5	
Duplicate (1804261-DUP2)		**Source: 18D0606-02**		Prepared: 04/26/2018 Analyzed: 04/27/2018						
Total Dissolved Solids (Residue, Filterable)	610	20	mg/L		620			0.8	5	
Batch 1804268 - E335.4										
Blank (1804268-BLK1)				Prepared: 04/26/2018 Analyzed: 04/30/2018						
Cyanide	ND	0.10	mg/L							
LCS (1804268-BS1)				Prepared: 04/26/2018 Analyzed: 04/30/2018						
Cyanide	2.0	0.10	mg/L	2.000		101	90-110			
LCS Dup (1804268-BSD1)				Prepared: 04/26/2018 Analyzed: 04/30/2018						
Cyanide	2.0	0.10	mg/L	2.000		101	90-110	0.1	20	
Matrix Spike (1804268-MS1)		**Source: 18D0602-03**		Prepared: 04/26/2018 Analyzed: 04/30/2018						
Cyanide	2.1	0.10	mg/L	2.000	ND	103	90-110			
Matrix Spike Dup (1804268-MSD1)		**Source: 18D0602-03**		Prepared: 04/26/2018 Analyzed: 04/30/2018						
Cyanide	2.0	0.10	mg/L	2.000	ND	98	90-110	5	20	
Batch 1804272 - E150.1										
Duplicate (1804272-DUP1)		**Source: 18D0662-02**		Prepared & Analyzed: 04/26/2018						
pH (pH Units)	7.8		-		7.8			0.1	200	H5
Temperature (°C)	21		-		21			2	200	H5
Batch 1805027 - SM2320B										
LCS (1805027-BS1)				Prepared & Analyzed: 05/03/2018						
Alkalinity, Total (As CaCO3)	240	2.0	mg/L	250.0		96	90-110			
LCS Dup (1805027-BSD1)				Prepared & Analyzed: 05/03/2018						
Alkalinity, Total (As CaCO3)	240	2.0	mg/L	250.0		96	90-110	0	10	
Matrix Spike (1805027-MS1)		**Source: 18D0606-02**		Prepared & Analyzed: 05/03/2018						
Alkalinity, Total (As CaCO3)	370	2.0	mg/L	250.0	130	96	85-115			
Matrix Spike Dup (1805027-MSD1)		**Source: 18D0606-02**		Prepared & Analyzed: 05/03/2018						
Alkalinity, Total (As CaCO3)	370	2.0	mg/L	250.0	130	95	85-115	0.5	10	
Batch 1805103 - SM2510 B										
LCS (1805103-BS1)				Prepared & Analyzed: 05/09/2018						
Conductivity	140	0.10	µmhos/cm	141.2		101	0-200			
LCS Dup (1805103-BSD1)				Prepared & Analyzed: 05/09/2018						
Conductivity	140	0.10	µmhos/cm	141.2		101	0-200	0.7	200	
Duplicate (1805103-DUP1)		**Source: 18E0192-01**		Prepared & Analyzed: 05/09/2018						
Conductivity	4.0	0.10	µmhos/cm		4.0			0	10	

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QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1805074 - SW8260B										
Blank (1805074-BLK1)				Prepared & Analyzed: 05/07/2018						
Benzene	ND	0.50	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Ethylbenzene	ND	0.50	ug/L							
Toluene	ND	0.50	ug/L							
Xylenes, Total	ND	1.5	ug/L							
Surrogate: 4-Bromofluorobenzene	*25.0*		*ug/L*	*25.00*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*26.9*		*ug/L*	*25.00*		*107*	*70-130*			
Surrogate: Toluene-d8	*25.1*		*ug/L*	*25.00*		*100*	*70-130*			
LCS (1805074-BS1)				Prepared & Analyzed: 05/07/2018						
1,1-Dichloroethene	29		ug/L	25.00		114	70-130			
Benzene	27		ug/L	25.00		109	70-130			
Chlorobenzene	29		ug/L	25.00		115	70-130			
Toluene	25		ug/L	25.00		101	70-130			
Trichloroethene	26		ug/L	25.00		103	70-130			
Surrogate: 4-Bromofluorobenzene	*24.6*		*ug/L*	*25.00*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*25.6*		*ug/L*	*25.00*		*102*	*70-130*			
Surrogate: Toluene-d8	*24.8*		*ug/L*	*25.00*		*99*	*70-130*			
LCS Dup (1805074-BSD1)				Prepared & Analyzed: 05/07/2018						
1,1-Dichloroethene	27		ug/L	25.00		110	70-130	4	30	
Benzene	26		ug/L	25.00		104	70-130	5	30	
Chlorobenzene	26		ug/L	25.00		105	70-130	9	30	
Toluene	24		ug/L	25.00		96	70-130	5	30	
Trichloroethene	25		ug/L	25.00		98	70-130	4	30	
Surrogate: 4-Bromofluorobenzene	*24.4*		*ug/L*	*25.00*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*26.1*		*ug/L*	*25.00*		*104*	*70-130*			
Surrogate: Toluene-d8	*25.1*		*ug/L*	*25.00*		*100*	*70-130*			
Matrix Spike (1805074-MS1)	**Source: 18D0582-02**			Prepared & Analyzed: 05/07/2018						
1,1-Dichloroethene	27		ug/L	25.00	0.070	109	70-130			
Benzene	26		ug/L	25.00	0.020	104	70-130			
Chlorobenzene	26		ug/L	25.00	0.0	105	70-130			
Toluene	27		ug/L	25.00	3.5	95	70-130			
Trichloroethene	24		ug/L	25.00	0.040	97	70-130			
Surrogate: 4-Bromofluorobenzene	*24.4*		*ug/L*	*25.00*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*26.4*		*ug/L*	*25.00*		*106*	*70-130*			
Surrogate: Toluene-d8	*24.9*		*ug/L*	*25.00*		*100*	*70-130*			
Matrix Spike Dup (1805074-MSD1)	**Source: 18D0582-02**			Prepared & Analyzed: 05/07/2018						
1,1-Dichloroethene	27		ug/L	25.00	0.070	108	70-130	0.8	30	
Benzene	25		ug/L	25.00	0.020	101	70-130	2	30	
Chlorobenzene	26		ug/L	25.00	0.0	105	70-130	0.3	30	
Toluene	27		ug/L	25.00	3.5	95	70-130	0.1	30	
Trichloroethene	24		ug/L	25.00	0.040	95	70-130	2	30	
Surrogate: 4-Bromofluorobenzene	*24.7*		*ug/L*	*25.00*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*26.4*		*ug/L*	*25.00*		*106*	*70-130*			
Surrogate: Toluene-d8	*25.3*		*ug/L*	*25.00*		*101*	*70-130*			

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QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1804245 - E300.0 (2.1)										
Blank (1804245-BLK1)				Prepared & Analyzed: 04/25/2018						
Chloride	ND	1.0	mg/L							
Fluoride	ND	0.50	mg/L							
Nitrogen, Nitrate (As N)	ND	0.50	mg/L							
Nitrogen, Nitrite (As N)	ND	0.10	mg/L							
Sulfate	ND	5.0	mg/L							
LCS (1804245-BS1)				Prepared & Analyzed: 04/25/2018						
Chloride	12	1.0	mg/L	12.50		92	90-110			
Fluoride	2.0	0.50	mg/L	2.000		101	90-110			
Nitrogen, Nitrate (As N)	4.7	0.50	mg/L	5.000		95	90-110			
Nitrogen, Nitrite (As N)	2.3	0.10	mg/L	2.500		92	90-110			
Sulfate	12	5.0	mg/L	12.50		96	90-110			
LCS Dup (1804245-BSD1)				Prepared & Analyzed: 04/25/2018						
Chloride	12	1.0	mg/L	12.50		94	90-110	2	10	
Fluoride	2.0	0.50	mg/L	2.000		101	90-110	0.4	10	
Nitrogen, Nitrate (As N)	4.9	0.50	mg/L	5.000		98	90-110	3	10	
Nitrogen, Nitrite (As N)	2.4	0.10	mg/L	2.500		95	90-110	3	10	
Sulfate	12	5.0	mg/L	12.50		98	90-110	3	10	
Matrix Spike (1804245-MS1)		**Source: 18D0613-08**		Prepared & Analyzed: 04/25/2018						
Fluoride	3.7	0.50	mg/L	2.000	1.7	100	80-120			
Nitrogen, Nitrate (As N)	4.7	0.50	mg/L	5.000	0.22	89	80-120			
Matrix Spike (1804245-MS2)		**Source: 18D0625-01**		Prepared & Analyzed: 04/26/2018						
Nitrogen, Nitrate (As N)	5.0	0.50	mg/L	5.000	0.46	92	80-120			
Nitrogen, Nitrite (As N)	2.2	0.10	mg/L	2.500	ND	88	80-120			
Matrix Spike (1804245-MS3)		**Source: 18D0614-01RE1**		Prepared & Analyzed: 04/26/2018						
Chloride	17		mg/L	12.50	6.4	88	80-120			
Sulfate	28		mg/L	12.50	18	85	80-120			
Matrix Spike Dup (1804245-MSD1)		**Source: 18D0613-08**		Prepared & Analyzed: 04/25/2018						
Fluoride	3.7	0.50	mg/L	2.000	1.7	100	80-120	0.4	10	
Nitrogen, Nitrate (As N)	4.7	0.50	mg/L	5.000	0.22	90	80-120	0.6	10	
Matrix Spike Dup (1804245-MSD2)		**Source: 18D0625-01**		Prepared & Analyzed: 04/26/2018						
Nitrogen, Nitrate (As N)	5.1	0.50	mg/L	5.000	0.46	92	80-120	0.2	10	
Nitrogen, Nitrite (As N)	2.2	0.10	mg/L	2.500	ND	88	80-120	0.4	10	
Matrix Spike Dup (1804245-MSD3)		**Source: 18D0614-01RE1**		Prepared & Analyzed: 04/26/2018						
Chloride	18		mg/L	12.50	6.4	89	80-120	0.6	10	
Sulfate	29		mg/L	12.50	18	86	80-120	0.6	10	

TURNER LABORATORIES INC.

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 18D0619 DATE 4/23/18 PAGE 1 OF 1

PROJECT NAME Florence Copper #

CONTACT NAME: Barb Sylvester

COMPANY NAME: Brown and Caldwell

ADDRESS: 2 N Central Ave, Suite 1600

CITY Phoenix STATE AZ ZIP CODE 85004

PHONE 602-567-3894 FAX

SAMPLER'S SIGNATURE [signature]

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Diss Metals - list (Field Filtered)	Total Uranium (not Filtered)	Inorganics - list	Cyanide (free)	Organics - list	G.Alpha, (RadSafety sub)	Uranium activity if G. Alpha >12	Ra226, 228, Ra-Tot (RadsSafety)	TPH-D (TestAmerica Sub)											
R-09	4-23-18	1555		GW	10	X	X	X	X	X	X	X	X	X											
8260 TB	4-23-18	1600		GW	1					X															
				GW																					
				GW																					
				GW																					
				GW																					
				GW																					
				GW																					
				GW																					
				GW																					
				GW																					

1. RELINQUISHED BY:
Signature [signature]
Printed Name [illegible]
Firm [illegible]
Date/Time 4-23-18 1630

2. RECEIVED BY: UPS
Signature
Printed Name
Firm
Date/Time

3. RELINQUISHED BY: UPS
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY: [signature]
Signature Joseph Catalano
Printed Name
TURNER LABORATORIES INC.
Firm 4/23/18 1006
Date/Time

TURNAROUND REQUIREMENTS:
X Standard (approx10 days)*
__ Next day __ 2 Day __ 5 Day*
__ Email Preliminary Results To:
* Working Days

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

REPORT REQUIREMENTS:
X I. Routine Report
__ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
__ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account X Y __ N
P.O. #
Bill to: Florence Copper

SAMPLE RECEIPT:
Total Containers
Temperature 2.2
☑ Wet Ice ☐ Blue Ice

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis: ☐ Yes ☐ No	Custody Seals ☐	Preservation Confirmation ☒
ADEQ Forms: ☐ Yes ☐ No	Container Intact ☒	Appropriate Head Space ☒
Mail ADEQ Forms: ☐ Yes ☐ No	COC/Labels Agree ☒	Received Within Hold Time ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-101943-1
Client Project/Site: 18D0619

For:
Turner Laboratories, Inc.
2445 North Coyote Drive
Suite 104
Tucson, Arizona 85745

Attn: Kevin Brim

Authorized for release by:
5/16/2018 12:23:25 PM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Definitions/Glossary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
Q9	Insufficient sample received to meet method QC requirements.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Job ID: 550-101943-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-101943-1

Comments
No additional comments.

Receipt
The sample was received on 4/27/2018 10:50 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8º C.

GC Semi VOA
Method(s) 8015D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD) associated with preparation batch 550-145985 and analytical batch 550-146884. Affected samples have been added a Q9 qualifier. 18D0619-01 (550-101943-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 3510C.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-101943-1	18D0619-01	Water	04/23/18 15:55	04/27/18 10:50

Detection Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Client Sample ID: 18D0619-01

Lab Sample ID: 550-101943-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
ORO (C22-C32)	0.21	Q9	0.20		mg/L	1		8015D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Client Sample ID: 18D0619-01
Date Collected: 04/23/18 15:55
Date Received: 04/27/18 10:50

Lab Sample ID: 550-101943-1
Matrix: Water

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
ORO (C22-C32)	0.21	Q9	0.20		mg/L		04/30/18 14:16	05/10/18 23:29	1
DRO (C10-C22)	ND	Q9	0.10		mg/L		04/30/18 14:16	05/10/18 23:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*79*		*10 - 150*	*04/30/18 14:16*	*05/10/18 23:29*	*1*

Surrogate Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Method: 8015D - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	OTPH (10-150)							
550-101943-1	18D0619-01	79							
LCS 550-145985/2-A	Lab Control Sample	79							
LCSD 550-145985/3-A	Lab Control Sample Dup	79							
MB 550-145985/1-A	Method Blank	65							

Surrogate Legend

OTPH = o-Terphenyl (Surr)

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 550-145985/1-A
Matrix: Water
Analysis Batch: 146884

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 145985

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
ORO (C22-C32)	ND		0.20		mg/L		04/30/18 14:15	05/11/18 11:16	1
DRO (C10-C22)	ND		0.10		mg/L		04/30/18 14:15	05/11/18 11:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*65*		*10 - 150*	*04/30/18 14:15*	*05/11/18 11:16*	*1*

Lab Sample ID: LCS 550-145985/2-A
Matrix: Water
Analysis Batch: 146884

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 145985

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
ORO (C22-C32)			1.60	1.59		mg/L		99	69 - 107		
DRO (C10-C22)			0.400	0.450		mg/L		113	42 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*79*		*10 - 150*

Lab Sample ID: LCSD 550-145985/3-A
Matrix: Water
Analysis Batch: 146884

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 145985

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
ORO (C22-C32)			1.60	1.59		mg/L		100	69 - 107	0	20
DRO (C10-C22)			0.400	0.447		mg/L		112	42 - 133	1	22

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl (Surr)	*79*		*10 - 150*

QC Association Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

GC Semi VOA

Prep Batch: 145985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-101943-1	18D0619-01	Total/NA	Water	3510C	
MB 550-145985/1-A	Method Blank	Total/NA	Water	3510C	
LCS 550-145985/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 550-145985/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 146884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-101943-1	18D0619-01	Total/NA	Water	8015D	145985
MB 550-145985/1-A	Method Blank	Total/NA	Water	8015D	145985
LCS 550-145985/2-A	Lab Control Sample	Total/NA	Water	8015D	145985
LCSD 550-145985/3-A	Lab Control Sample Dup	Total/NA	Water	8015D	145985

Lab Chronicle

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Client Sample ID: 18D0619-01
Date Collected: 04/23/18 15:55
Date Received: 04/27/18 10:50

Lab Sample ID: 550-101943-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			145985	04/30/18 14:16	REM	TAL PHX
Total/NA	Analysis	8015D		1	146884	05/10/18 23:29	TC1	TAL PHX

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-18

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Method	Method Description	Protocol	Laboratory
8015D	Diesel Range Organics (DRO) (GC)	SW846	TAL PHX
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL PHX

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

SUBCONTRACT ORDER

Turner Laboratories, Inc.

101943

18D0619

SENDING LABORATORY:	RECEIVING LABORATORY:
Turner Laboratories, Inc.	TestAmerica Phoenix
2445 N. Coyote Drive, Ste #104	4625 East Cotton Center Boulevard Suite 189
Tucson, AZ 85745	Phoenix, AZ 85540
Phone: 520.882.5880	Phone :(602) 437-3340
Fax: 520.882.9788	Fax:
Project Manager: Kevin Brim	Please CC Kevin Brim Kbrim@turnerlabs.com

Analysis	Expires	Laboratory ID	Comments
-01			
Sample ID: 18D0619-01 Drinking Water	**Sampled:04/23/2018 15:55**		
8015D Sub	04/30/2018 15:55		8015D DRO and ORO Paramaters Only
Containers Supplied:			

8015D Sub
o-Terphenyl
C10-C32 (Total)
C22-C32 (Oil Range Organics)
C10-C22 (Diesel Range Organics)
C6-C10 (Gasoline Range Organics)

550-101943 Chain of Custody

3,8°C UPS GR

TA-PHX

Released By	Date	Received By	Date
	4/24/18		4-27-18 1050
Released By	Date	Received By	Date

Login Sample Receipt Checklist

Client: Turner Laboratories, Inc.

Job Number: 550-101943-1

Login Number: 101943
List Number: 1
Creator: Gravlin, Andrea

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Radiation Safety Engineering, Inc.
3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121 (480) 897-9459
Website: www.radsafe.com FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Turner Laboratories
2445 N. Coyote Drive, Ste. 104
Tucson, AZ 85745

Sampling Date: April 23, 2018
Sample Received: May 01, 2018
Analysis Completed: May 22, 2018

Sample ID	Gross Alpha Activity Method 600/00-02 (pCi/L)	Uranium Activity Method ASTM D6239 (pCi/L)	Adjusted Gross Alpha (pCi/L)	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
18D0619-01	17.7 ± 0.9	12.9 ± 1.2	4.8 ± 1.5	3.1 ± 0.3	3.1 ± 0.4	6.2 ± 0.5
Date of Analysis	5/2/2018	5/21/2018	5/21/2018	5/4/2018	5/4/2018	5/4/2018

Robert L. Metzger, Ph.D., C.H.P. 5/22/2018
Laboratory License Number AZ0462 Date

Radiation Safety Engineering, Inc.
3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121 (480) 897-9459
Website: www.radsafe.com FAX (480) 892-5446

Isotopic Uranium Analysis

Turner Laboratories
2445 N. Coyote Drive, Ste. 104
Tucson, AZ 85745

Sampling Date: April 23, 2018
Sample Received: May 01, 2018
Uranium Analysis Date: May 21, 2018

Sample No.	^{238}U	^{235}U	^{234}U	Total	
18D0619-01	6.0 ± 0.6	0.280 ± 0.004	6.6 ± 0.6	12.9 ± 1.2	Activity (pCi/L)
	17.9 ± 1.7	0.131 ± 0.002	0.00106 ± 0.00010	18.0 ± 1.7	Content (µg/L)
	Comments:				

Robert L. Metzger, Ph.D., C.H.P. 5/22/2018
Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

April 23, 2018 (Sample Date) 15:55 (Sample Time) (24 hour clock) _____ (Owner/Contact Person)

_____ (Owner/Contact Fax Number) _____ (Owner/Contact Phone Number)

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring — Date Q1 collected: _____

☐ Quarterly — Date Q2 collected: _____

☐ Composite of four quarterly samples — Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result		Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	5/21/2018	4.8 ± 1.5		
600/00-02		3 pCi/L	Gross Alpha	4002	5/2/2018	17.7 ± 0.9		
7500 - Rn			Radon	4004				
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	5/21/2018	18.0 ± 1.7	µg/L	
			Uranium 234	4007	5/21/2018	0.00106 ± 0.00010		
			Uranium 235	4008	5/21/2018	0.131 ± 0.002		
			Uranium 238	4009	5/21/2018	17.9 ± 1.7		
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/4/2018	6.2 ± 0.5		X
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/4/2018	3.1 ± 0.3		
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/4/2018	3.1 ± 0.4		

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE60312

Lab ID Number: AZ0462

Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: 18D0619-01

Authorized Signature: Robt L. Metzger

Date Public Water System Notified: _____

DWAR 6: 11/2007

SUBCONTRACT ORDER

Turner Laboratories, Inc.

18D0619

SENDING LABORATORY:

Turner Laboratories, Inc.
2445 N. Coyote Drive, Ste #104
Tucson, AZ 85745
Phone: 520.882.5880
Fax: 520.882.9788
Project Manager: Kevin Brim

RECEIVING LABORATORY:

Radiation Safety Engineering, Inc.
3245 N. Washington St.
Chandler, AZ 85225-1121
Phone :(480) 897-9459
Fax: (480) 892-5446
Please CC Kevin Brim Kbrim@turnerlabs.com

Analysis	Expires	Laboratory ID	Comments
Sample ID: 18D0619-01 Drinking Water Sampled:04/23/2018 15:55			
Radiochemistry, Gross Alpha	10/20/2018 15:55		Analyze Uranium and Adjusted Alpha if G. Alpha is > 12
Radiochemistry, Radium 226/228	05/23/2018 15:55		
Containers Supplied:			

H 60312

Released By	Date	Received By	Date
[signature]	4/30/18 16:00	UPS	4/30/18 16:00
Released By	Date	Received By	Date

APPENDIX D

Well Completion Documentation

PIPE TALLY

Project Name.:	FCF	Project No.:	124687-007
Well No.:	I-04	Date:	11-14-17
Location:	FLORENCE, AZ	Pipe Talley for:	OVERBURDEN CASING
Total Depth:	507	Geologist:	C. GIUSTI - Z. SMITH

Type of Connections: ☑ Welded ☐ T+C ☐ Flush Thread ☐ Other COLLARD

Pipe	✓	Length (ft)	Length Σ (ft)	Pipe Type	Dist. from sensor bottom to bottom of pipe (feet)	Sensor Type (ACD, CS, ERT)	Sensor ID	Wire Lead ID	Depth of Sensor (feet bgs)
1	✓	40.27	40.27	FUSION BOND LCS					
2	✓	40.03	80.30	LCS					
3	✓	40.04	120.34						
4	✓	40.05	160.39						
5	✓	40.01	200.40						
6	✓	40.04	240.44						
7	✓	40.05	280.49						
8	✓	40.06	320.55						
9	✓	40.04	360.59						
10	✓	40.03	400.62						
11	✓	40.02	440.64						
12	✓	40.29	480.93						
13	✓	40.03	520.96						

Notes:

POLYETHYLENE FUSION BONDED LCS 14" OD x .312" WALL

LCS SPIRAL BOUND 14" OD x .312" WALL COLLARD

[redacted] Shoe: 2.0 ft Concrete

Centralizers at bottom of end joint (every 40 ft.)

SUMMARY OF TALLY	
Total Length tallied:	520.96
Casing Stick-Up:	20.96
Length of Casing Cut-Off:	
Bottom of Well:	500.00
Screened Interval:	—
Total Screen in Hole:	—

Sensor Types: Annular Conductivity Device (ACD), installed as pairs with 3 ft spacing
Conductivity Sensor (CS) 4 sensors with sing lead 20 ft spacing
Electrical Resistivity Tomography (ERT)

HALEY ALDRICH

6.8 ft - Stick up to collar
20.9 ft - total Stick up

HALEY ALDRICH

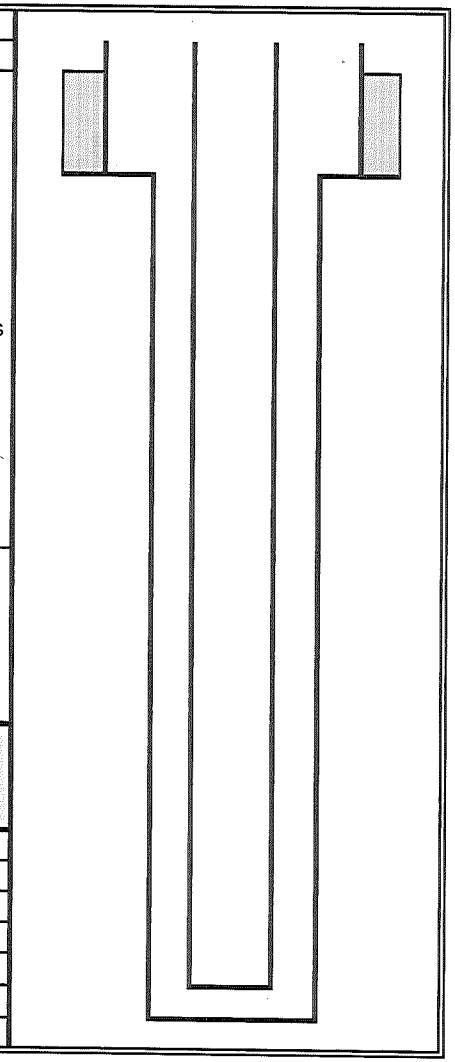
ESTIMATED ANNULAR MATERIAL RECORD

Project Name: ICI PT4 **Project #.:** 127687-007 **Date:** 11/14/2017
Well No.: I-04 **Geologist:** Z. Smith & S. Hensel

ANNULAR VOLUME CALCULATIONS

Total Depth of Borehole [T]:	507	feet	Total Cased Depth:	500	feet
Borehole Diameter [D]:	20	inches	Rat Hole Volume [R=(D²) 0.005454*L_r]:	15.3	Ft³
Screen Length [L_s]:	–	feet	Rat Hole Length [L_r]	7	feet
Screen Diameter [d_s]:	–	inches	Camera Tube Length [L_{ct}]	–	feet
Casing Length [L_c]	500	feet	Camera Tube Diameter [d_{ct}]	–	inches
Casing Diameter [d_c]	14	inches			

Screen Annular Volume (A_s): (D^2-d_s^2) 0.005454 = – Ft³/Lin. Ft
Casing Annular Volume (A_c): (D^2-d_c^2) 0.005454 = 1.11 Ft³/Lin. Ft
Casing/Cam.Tube Annular Volume (A_{c+ct}): (D^2-d_c^2-d_{ct}^2) 0.005454 = – Ft³/Lin. Ft



EQUATIONS

2,700 lbs. Silica Sand = 1 cubic yard = 27 cubic feet
[1] Volume of bag (Ft^3) = bag weight/100
[2] Calculated depth = Previous Calculated depth - (v/A)

Bentonite Sack = 0.69 ft³
Silica Sand Super Sack = 3000 lbs.

No.	✓	Weight of Bag (lbs.)	Volume of Bag[1] (v) (ft³)	Total Vol. of Bags (ft³)	Calculated Depth[2] (ft bls)	Tagged Depth (ft bls)	Comments
1	✓	–	656.8	656.8	-46.8	–	Type V 14.5 lbs/gal

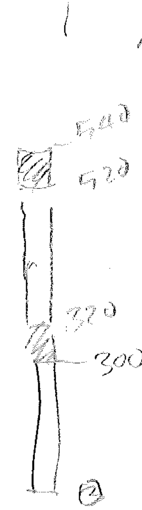
✓ = 15.3 ft³ + (24²-14²) 0.005454 (40) + (20²-14²) 0.005454 * (500-40) = 610.0 ft³
Pumped volume = 656.8 ft³
~ 10%

PIPE TALLY

Project Name.: FCI PTF	Project No.: 129487-007
Well No.: F-04	Date: 3/27/18
Location: Florence, AZ	Pipe Talley for: Lower
Total Depth: 1223 Drilled	Geologist: S Hensel for Bushee

Type of Connections: ❑ Welded ☒ T+C ☒ Flush Thread ❑ Other

Pipe	✓	Length (ft)	Length Σ (ft)	Pipe Type	Dist. from sensor bottom to bottom of pipe (feet)	Sensor Type (ACD, CS, ERT)	Sensor ID	Wire Lead ID	Depth of Sensor (feet bgs)
1	✓	0.45	0.45	316 SS Bullnose	NA				
2	✓	19.99	20.44	Sch80 5" .080 slot					
* 3	✓	19.98	40.42	↓					
4	✓	19.99	60.41						
* 5	✓	19.99	80.40						
6	✓	19.98	100.38						
* 7	✓	19.98	120.36						
8	✓	20.00	140.36						
* 9	✓	20.00	160.36						
10	✓	20.01	180.37						
* 11	✓	20.02	200.39						
12	✓	20.01	220.40						
* 13	✓	20.01	240.41						
14	✓	20.00	260.41						
* 15	✓	20.01	280.42						
16	✓	20.03	300.45	↓					
17	✓	9.87	310.32	SS BL					
18	✓	4.77	315.09	SS Blank					
19	✓	4.53	319.62	SS Blank					
* 20	✓	20.02	339.69	0.080 PVC slot					
21	✓	20.03	359.67						
* 22	✓	20.03	379.70						
23	✓	20.01	399.71						
* 24	✓	20.03	419.74						
25	✓	20.02	439.76						
* 26	✓	20.01	459.77						
27	✓	20.01	479.78						
* 28	✓	20.02	499.80						
29	✓	20.04	519.84						
* (30)	✓	20.03	539.87	↓					



Notes:
1 - SS Bullnose cap, FT
PVC: Sch 80, [illegible] 5", 0.080" slot, 5.56" OD,
ID: 4.77"
3 { 17 - 316 SS Sch 80 pin Sch 40 40 box
18 316 Sch 40 box
19 - 316 SS - Sch 40 pin / Sch 80 box
31 316 SS Sch 80 pin Sch 40 box
32 316 SS Sch 40 pin
33 316 SS Sch 40 pin / Sch 80 box
FRP 5.44" OD, 4.74" ID, All blank
* Centralizer @ 40' spacing

SUMMARY OF TALLY

Total Length tallied:	1209.55
Casing Stick-Up:	1.45
Length of Casing Cut-Off:	— (5.2 temp)
Bottom of Well:	1204.10
Screened Interval:	1203.65 - 903.65, 884.48 - 664.23, 645.13 - 524.95
Total Screen in Hole:	640

Sensor Types:
Annular Conductivity Device (ACD), installed as pairs with 3 ft spacing
Conductivity Sensor (CS) 4 sensors with sing lead 20 ft spacing
Electrical Resistivity Tomography (ERT)

HALEY ALDRICH

Top of Beam: 4.77 above MP, ∴ want top coupler to be 3.1 below beam
Target stick up is 1.6 above MP.
PC = [illegible]
Measured = 1.45
4.72 - 3.27 = 1.45

HALEY ALDRICH

PIPE TALLY

Project Name.: FCS PTF	Project No.: 129687-007
Well No.: I-04	Date: 3/27/18
Location: Florence, AZ	Pipe Talley for: Lower
Total Depth: 1225' Drilled	Geologist: S Henkel, M Forsythe

Type of Connections: ☐ Welded ☒ T+C ☒ Flush Thread ☐ Other

Pipe	✓	Length (ft)	Length Σ (ft)	Pipe Type	Dist. from sensor bottom to bottom of pipe (feet)	Sensor Type (ACD, CS, ERT)	Sensor ID	Wire Lead ID	Depth of Sensor (feet bgs)
31	✓	9.85	549.72	SS BL					
* 32	✓	4.72	554.49	SS BL					
33	✓	4.53	558.97	SS BL					
* 34	✓	20.02	578.99	0.080 PVC SLOT					
35	✓	20.04	599.03	↓					
* 36	✓	20.04	619.07	↓					
37	✓	20.02	639.09	↓					
* 38	✓	20.03	659.12	↓					
39	✓	20.03	679.15	↓					
40	✓	8.50	679.65	SSXOVER					
* 41	✓	28.95	708.6	5" FRP BLANK					
42	✓	28.87	737.47	↓					
* 43	✓	29.02	766.49	↓					
* 44		29.02	795.51	↓					
* 45		29.05	824.54	↓					
46		29.03	853.57	↓					
* 47		29.00	882.57	↓					
* 48		28.75	911.32	↓					
* 49		28.95	940.27	↓					
50		28.93	969.2	↓					
* 51		28.87	998.07	↓					
* 52		29.01	1027.08	↓					
53		29.33	1056.41	↓					
54		29.00	1085.07	↓					
* 55		29.02	1114.49	↓					
* 56		28.99	1143.48	↓					
* 57		28.05	1171.51	↓					
58		28.93	1200.44	↓					
59		4.30	1204.74	↓					
60		0.81	1205.55	↓					
61		5.10	1210.75	TEMP PVC					

Notes:

#61,

#54 = 5.11 w/coupler

SUMMARY OF TALLY

Total Length tallied:	1205.55
Casing Stick-Up:	1.47
Length of Casing Cut-Off:	5.2 TEMP PVC
Bottom of Well:	1204.10
Screened Interval:	
Total Screen in Hole:	

Sensor Types: Annular Conductivity Device (ACD), Installed as pairs with 3 ft spacing
Conductivity Sensor (CS) 4 sensors with sing lead 20 ft spacing
Electrical Resistivity Tomography (ERT) NA

HALEY ALDRICH

AH: 28.80
-14.37
+

HALEY ALDRICH

Casing Layout

Project Name.:	Florence Copper INC	**Project No.:**	129687-007
Well No.:	I-04	**Date:**	3.27.18
Location:	Florence AZ	**Layout for:**	Lower
Total Depth:	###	**Geologist:**	G. Foushee

Pipe Length		Depth BGS
		799.34
20.01	23	819.35
20.03	22	839.38
20.03	21	859.41
20.02	20	879.43
4.53	19	883.96
4.77	18	888.73
9.87	17	898.60
20.03	16	918.63
20.01	15	938.64
20.00	14	958.64
20.01	13	978.65
20.01	12	998.66
20.02	11	1018.68
20.01	10	1038.69
20.00	9	1058.69
20.00	8	1078.69
19.98	7	1098.67
19.98	6	1118.65
19.99	5	1138.64
19.99	4	1158.63
19.98	3	1178.61
19.99	2	1198.60
0.45	1	1199.05

Pipe Length		Depth BGS
		345.48
29.03	46	374.51
29.03	45	403.54
29.02	44	432.56
29.02	43	461.58
28.87	42	490.45
28.95	41	519.40
0.50	40	519.90
20.03	39	539.93
20.03	38	559.96
20.02	37	579.98
20.04	36	600.02
20.04	35	620.06
20.02	34	640.08
4.53	33	644.61
4.72	32	649.33
9.85	31	659.18
20.03	30	679.21
20.04	29	699.25
20.02	28	719.27
20.01	27	739.28
20.01	26	759.29
20.02	25	779.31
20.03	24	799.34

Pipe Length		Depth BGS
	69	
	68	
	67	
	66	
	65	
	64	
	63	
	62	-6.50
	61	-6.50
	60	-6.50
5.11	59	-1.39
28.93	58	27.54
28.05	57	55.59
28.97	56	84.56
29.02	55	113.58
29.06	54	142.64
29.33	53	171.97
29.01	52	200.98
28.87	51	229.85
28.93	50	258.78
28.95	49	287.73
28.75	48	316.48
29.00	47	345.48

SENSOR DETAILS

Sensor Type	Sensor ID	Pipe #	Distance from Bottom of Sensor to Bottom of Pipe	Depth of Sensor (BGS)

Pipe Number	Type
1	SS End Cap
2 - 16	PVC SCH 80 Screen 0.080
17-19	PVC SCH 80 Blank
20-30	PVC SCH 80 Screen 0.080
31-33	PVC SCH 80 Blank
34-39	PVC SCH 80 Screen 0.080
40	PVC SCH 80/SCH 40 Blank
41-58	5" FRP
59	*Temporary 5" FRP for Landing*

Notes:

HALEY ALDRICH

ESTIMATED ANNULAR MATERIAL RECORD

Project Name: FC1 **Project #.:** 129687-007 **Date:** 3-28-18
Well No.: I-04 **Geologist:** C. GUST

ANNULAR VOLUME CALCULATIONS

Total Depth of Borehole [T]:	1225 feet	Total Cased Depth:	1200 feet
Borehole Diameter [D]:	12.25 inches	Rat Hole Volume [R=(D^2) 0.005454*L_r]:	20.46 Ft^3
Screen Length [L_s]:	640 feet	Rat Hole Length [L_r]	25 feet
Screen Diameter [d_s]:	5.56 inches	Camera Tube Length [L_{ct}]	— feet
Casing Length [L_c]	520 feet	Camera Tube Diameter [d_{ct}]	— inches
Casing Diameter [d_c]	5.44 inches		

Screen Annular Volume (A_s): (D^2-d_s^2) 0.005454 = ~~0.64~~ 0.65 Ft^3/Lin. Ft
Casing Annular Volume (A_c): (D^2-d_c^2) 0.005454 = 0.67 Ft^3/Lin. Ft
Casing/Cam.Tube Annular Volume (A_{c+ct}): (D^2-d_c^2-d_{ct}^2) 0.005454 = _____ Ft^3/Lin. Ft

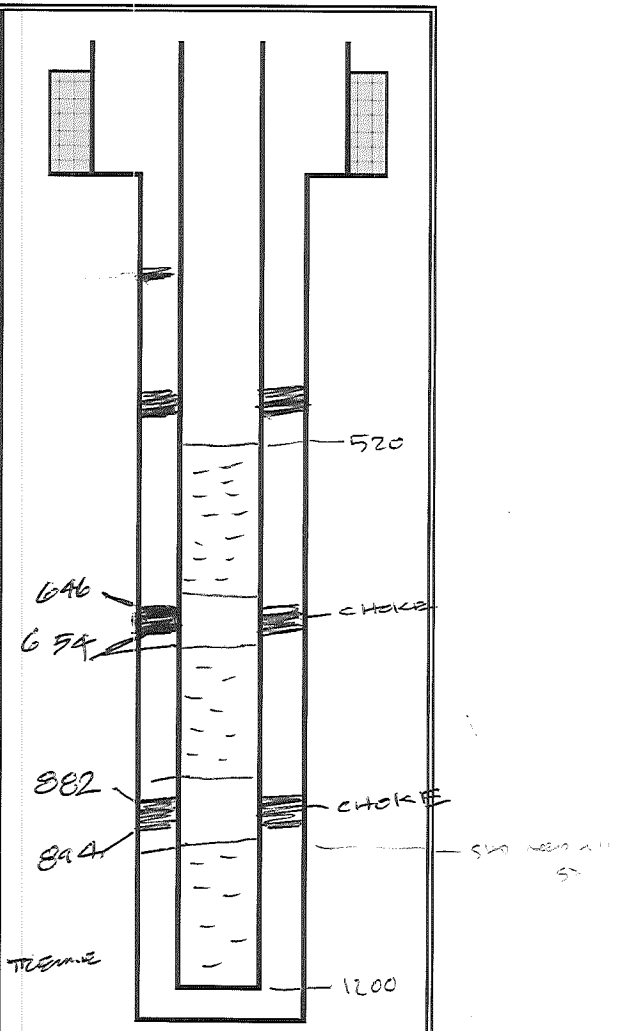
EQUATIONS

2,700 lbs. Silica Sand = 1 cubic yard = 27 cubic feet
[1] Volume of bag (Ft^3) = bag weight/100
[2] Calculated depth = Previous Calculated depth - (v/A)

Bentonite Sack = 0.69 ft^3
Silica Sand Super Sack = 3000 lbs.

No.	✓	Weight of Bag (lbs.)	Volume of Bag[1] (v) (ft^3)	Total Vol. of Bags (ft^3)	Calculated Depth[2] (ft bls)	Tagged Depth (ft bls)	Comments	TREMIE
1	✓	3000	30	30	1185	NA	#6 SAND (1)	
2	✓	3000	30	60	1152*	1153	#6 SAND (2)	1154
3	✓	3000	30	90	1119*	—	#6 SAND (3)	1124
4	✓	3000	30	120	1099	1072	#6 SAND (4)	1090
5	✓	3000	30	150	1045		#6 SAND (5)	1032'
6	✓	3000	30	180	1018		#6 SAND (6)	
7	✓	3000	30	210	991		#6 SAND (7)	1000

* = 14" BOREHOLE 0.90 ft^3/Ln Ft



HALEY ALDRICH

ESTIMATED ANNULAR MATERIAL RECORD (Continued)

Project Name: FCI Project No.: 129691-007 Geologist: G. FOUSHEE / L. Gusto
Well No.: E-03 Date:

No.	✓	Weight of Bag (lbs.)	Volume of Bag[1](v) (ft^3)	Total Vol. of Bags (ft^3)	Calculated Depth[2] (ft bls)	Tagged Depth (ft bls)	Comments
9	✓	3000	30	~~240~~	964	961	TREMIE
9	✓	3000	30	270	934		TREMIE @ 940'
10	✓	3000	30	300	907	905	SWABS 1100-1200, 1000-1100, 900-1000. UNTIL STABLE @ 919'
11	✓	2250	22.5	322.5	~~898~~	903	
12	✓	~~1000~~ 750	~~10~~ 7.5	~~330~~ 330	897□	895	#6 SAND
					~~896~~	896	SWABS 900-1000 KIT MIN T 875
						896	SWABS 900-1000 KIT MIN 878
13	✓	268	2.7	332.7	894□	894	x4 5 gal BUCKETS #6 878
14	✓	1000	10	342.7	886□	887	x20 50 lbs BAGS #60 878
15	✓	350	3.5	346.2	884□	886	x7 50 lbs BAGS #60 878
16	✓	300	3.0	349.2	883.5□	882	x6 50 lbs bags #60 878
17	✓	3000	30	379.2	857	—	#6 gravel SURGE 878
18	✓	3000	30	409.2	832	—	SAA 846
19	✓	3000	30	439.2	807	—	SAA 846/845
20 15	✓	3000	30	469.2	782	781	SAA #15 845
21 16	✓	3000	30	499.2	756	—	SS 16 783
22 17	✓	3000	30	529.2	732	—	SS 17 750
23 18	✓	3000	30	559.2	708	— ?	SS 18 719
24 19	✓	3000	30	589.2	684	678	SS 19 688
25 20	✓	3000	30	619.2	648		SS 20 656
26 21	✓	~~750~~	7.5	627.2	642	646/654	SS 21, ADD 1/4 BAG, TAG TOP. SWABS 659-679
27	✓	~~670~~	6.7	633.9	654	654	SWABS, TAG @ 659. TARGET IS 654, ADD 10 BUCKETS #6

Notes:
TREMIE @ 626.
WILL ADD 15' OF PVP TO BRING INTO BASIC SECTION

□ = 16" borehole = 1.22 ft^3/ln ft

HALEY ALDRICH

ESTIMATED ANNULAR MATERIAL RECORD (Continued)

3/3

Project Name: FCI Project No.: 129687-004 Geologist: G. FOUSHEE

Well No.: I-04 Date: 3/30/18

No.	✓	Weight of Bag (lbs.)	Volume of Bag[1](v) (ft^3)	Total Vol. of Bags (ft^3)	Calculated Depth[2] (ft bls)	Tagged Depth (ft bls)	Comments	
28	✓	1500	15	648.9	645	646 ✓	ADD 30 - 50 lb SACKS #60	643
29 4	✓	1420	14.2 ✓	663.1	635	—	ADD REMAINDER OF BAG #21	640
30 22	✓	3000	30	693.1	611	—	SS #22 #6 SAND	561
31 23	✓	3000	30	623.1	584	—	SS #23 #6 SAND	520
32 24	✓	3000	30	653.1	553	549	SS #24 #6 SAND (MADE UP FROM BROKEN BAG)	530
33 25	✓	3000	30	683.1	527	525	SS #25 #6 sand/gravel	501
34 26	✓	1500	15	698.1	512	514	SS #26 #6 gravel	501
						521	Swab 520-640, 15 min.	501
35 26		1500	15	713.1	508	504	SS #26 #6 gravel	501
						505	Swab 520-640 15 min	501
						505	Swab 520-640 10 min	501
33	✓	767	7.67	720.77	496	499	1-5gal pellplug, 14×50lb #60 sand	470
34	✓	400	4.00	724.77	495	490	8-50 lb #60 sand	470
35	✓	67	0.67	725.44	489	488	1-5gal pellplug	470
36	✓	—	458	1163.44	—	surface	Type V/Neat cement - 78 barrels, 14.6 lbs/gal	

Notes: Estimated grout = 16.2 yards = 436 ft³ = 77.7 barrels

Used = 78 barrels = 438 ft³ = Nearly per Foot 100%

HALEY ALDRICH

250 (196 - 29.50)

CEMEX

58776425

I-04

Plant:	Begin Loading:	To Job:	Arrive Job:	Start Unload:	Finish Unload:	Leave Job:	Return Plant:

Customer Code: Customer Name: Customer Job Number: Order Code / Date:

Project Code: Project Name: Project P.O. Number: Order P.O. Number:

Ticket Date: Delivery Address: Map Page: Map/Row/Column:

Delivery Instructions: Dispatcher:

Ticket Number:

Due On Job:	Slump:	Truck Number:	Driver Number:	Driver Name:	End Use:

LOAD QUANTITY	CUMULATIVE QUANTITY	ORDERED QUANTITY	MATERIAL CODE	PRODUCTION DESCRIPTION	UOM	UNIT PRICE	AMOUNT

☐ Cash ☐ Check ☐ Charge	Check # / Auth Code:	Signature of Driver Receiving Cash:	Cash Received:	Total COD Order Amount to Collect Without Standby Charges:

Comments:

WATER ADDED: _____ GAL YARDS IN DRUM: _____ WHEN ADDED.

_____ SIGNATURE

CURB LINE CROSSED AT OWNER'S/AGENT'S REQUEST:

_____ SIGNATURE

☐ LOAD WAS TESTED BY: _____

Notice: Our drivers will make every effort to place materials where the customer designates, but the Company assumes no responsibility for damages inside curb or property line. Customer agrees to the terms of sale and delivery and accepts concrete as is. Due to important factors which are out of our control after delivery, this Company will not accept any responsibility for the finished results. No credit for returned concrete. Buyers exceptions and claims shall be deemed waived unless made to us in writing within one business day after the receipt of materials.

SPECIAL TERMS: Any water added is at customers own risk. If water is added on job, concrete strength is no longer guaranteed. **WARNING**: Product may cause skin and/or eye irritation. **CAUTION**: Material may be hazardous to your safety and health. Please refer to the backside of this ticket for important safety handling information, and to the material safety data sheets for additional information.

AUTHORIZED SIGNATURE:

Ⓧ

68UNIVERSAL

INVOICE

720 11201 41069693

BASIC ENERGY SERVICES

3451 LeTourneau
Gillette, WY 82718
307-682-5258

Cementing Ticket **No. 1719** **21329A**

Date	Customer Order No.		Sect.	Twp.	Range	Truck Called Out	On Location	Job Began	Job Completed
11/14/17							11:00a	6;00p	8;00p

Owner: Florence Copper Mine | Contractor: | Charge To: Hydro Resources West

Mailing Address: | City: | State:

Well No. & Form: [illegible] ID #4 | Place: | County: Pinal | State: Ariz.

Depth of Well: | Depth of Job: 500 | Casing (New / Used) Size: 14 3/4 Weight: | Size of Hole: 20 | Amt. and Kind of Cement: 600 | (Cement Left in casing by) Request Necessity ______ feet

Kind of Job: Surface | Drillpipe: | Tubing: 2 7/8 | (Rotary / Cable) | Truck No. 28983

Price Reference No.	
Price of Job	2541.00
Second Stage	
Pump Truck Mileage	3825.00
P.U. Mileage	765.00
Other Charges	
Total Charges	7,131.00

Remarks: **Safety meeting water ahead 10bbls. mix 630sks cemt. class 25. @ 14.5# shutdown. wash up to pit.**

Cementer: Jim | Lead Yield: 1.38 | Lead Wt. 14.5 | Lead Water: 6.8 | SV: 155

Helper: Bryan | Tail Yield: | Tail Wt. | Lead Water: | SV:

District: Gillette | State: Wyo.

The above job was done under supervision of the owner, operator, or his agent whose signature appears below.

PO 152614

Agent of contractor or operator

Sales Ticket for Materials Only

QUANTITY SACKS	BRAND AND TYPE	PRICE	TOTAL
16	crew subsistance	500.0	8,000.00
8	tranfer cemt.	150.00	1,200.00
			0.00
			0.00
			0.00
			0.00
			0.00
			0.00
			0.00
			0.00
			0.00
			0.00
			0.00
Plugs			0.00

Equipment#	HRS			PRICE	TOTAL
		630	Handling & Dumping	2.44	1,537.20
28983	1		Mileage		0.00
84127/8544			Sub Total		17,868.20
			Discount		
			Sales Tax		
			Total		

Signature of operator

BASIC ENERGY SERVICES

3451 LeTourneau
Gillette, WY 82718
307-682-5258

Cementing Ticket No. 1719 21390

Date	Customer Order No.		Sect.	Twp.	Range	Truck Called Out	On Location	Job Began	Job Completed
3-30-18						13:00	14:00	15:30	17:00

Owner	Contractor	Charge To
Florance Copper Mine	Hydro Resources	Hydro West

Mailing Address	City	State

Well No. & Form	Place	County	State
I-04	copper mine	Pinal	AZ

Depth of Well	Depth of Job	Casing (New / Used)	Size / Weight	Size of Hole / Amt. and Kind of Cement	Cement Left in casing by / Request Necessity
1225	470		Size 5.5	Size of Hole 14 inch	Request Necessity 0 feet
			Weight	Amt. and Kind of Cement 2/5	Cement Left in casing by

Kind of Job	Drillpipe / Tubing	Rotary / Cable	Truck No.
Injection well	Tubing 2 7/8		28983

Price Reference No.
Price of Job 1210
Second Stage
Pump Truck Mileage 3825
P.U. Mileage 765
Other Charges
Total Charges 5,800.00

Remarks
safety meeting held
rig up to tubing with hose and valve
pump 5 bbls to clear tubing
pump and mix 320 sks type 2/5 cement
displace .5 bbl thru mixer
rig down from tubing
wash up in cellar
good cement to surface
THANK YOU

Cementer Bryan Hammond Lead Yield 1.38 Lead Wt. 14.6 Lead Water 6.8 SV 78

Helper Daniel Johnson Tail Yield Tail Wt. Lead Water SV

District Gillette State Wy

The above job was done under supervision of the owner, operator, or his agent whose signature appears below.

Agent of contractor or operator

Sales Ticket for Materials Only

QUANTITY SACKS	BRAND AND TYPE	PRICE	TOTAL
16	Crew subsistance	500	8,000.00
8	Transportaton of cement	150	1,200.00
			0.00
			0.00
			0.00
	P.O. # 152614		0.00
			0.00
	Expected 16.2 yrds=318 sks		0.00
	Used 320 sks		0.00
			0.00
			0.00
			0.00
			0.00
Plugs			0.00

Equipment #	HRS				
28983	1.5	320	Handling & Dumping	2.44	780.80
84127	1		Mileage		0.00
			Sub Total		15,780.80
			Discount		
			Sales Tax		
Signature of Operator			Total		

APPENDIX E

Geophysical Logs

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY FLORENCE COPPER
WELL ID I-04
FIELD FLORENCE COPPER
COUNTY PINAL STATE ARIZONA

TYPE OF LOGS: E-LOG - GAMMA
MORE:
LOCATION

SEC TWP RGE

OTHER SERVICES
SONIC
CALIPER
TEMP / FLUID COND.
DEVIATION
GAMMA-NEUTRON

PERMANENT DATUM		ELEVATION	K.B.
LOG MEAS. FROM	GROUND LEVEL	ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM	GROUND LEVEL		G.L.

DATE	11-14-17 / 03-27-18	TYPE FLUID IN HOLE	MUD
RUN No	1	MUD WEIGHT	N/A
TYPE LOG	E-LOG - GAMMA	VISCOSITY	N/A
DEPTH-DRILLER	1225.0 FT	LEVEL	~ 53.5 FT
DEPTH-LOGGER	1224.7 FT	MAX. REC. TEMP.	27.0 DEG C
BTM LOGGED INTERVAL	1224.7 FT	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.2 FT
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #900 / #500
RECORDED BY / Logging Eng.	E. BEAM / E. TURNER	TOOL STRING/SN	GEOVISTA E-LOG SN 4790
WITNESSED BY	CHAD - H&A	LOG TIME:ON SITE/OFF SITE	6:20 AM

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT	24 IN	STEEL	SURFACE	40 FT
2	20 IN	40 FT	500 FT	14 IN	STEEL	SURFACE	500 FT
3	12 3/4 IN	500 FT	TOTAL DEPTH				

COMMENTS:

.

Tool Summary:

Date	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18
Run No.	1	**Run No.**	2	**Run No.**	3
Tool Model	QL COMBO TOOL	**Tool Model**	GEOVISTA E-LOG	**Tool Model**	MSI 60MM SONIC
Tool SN	4183 / 6292	**Tool SN**	4790 / 4035	**Tool SN**	5001 / 5050
From	SURFACE	**From**	SURFACE	**From**	SURFACE
To	1224.7 FT	**To**	1224.7 FT	**To**	1224.7 FT
Recorded By	E. BEAM	**Recorded By**	E. BEAM	**Recorded By**	E. BEAM
Truck No	900 / 500	**Truck No**	900 / 500	**Truck No**	900 / 500
Operation Check	03-27-18	**Operation Check**	03-27-18	**Operation Check**	03-27-18
Calibration Check	03-27-18	**Calibration Check**	N/A	**Calibration Check**	N/A
Time Logged	8:00 AM	**Time Logged**	9:10 AM	**Time Logged**	9:45 AM

Date	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18	**Date**	
Run No.	4	**Run No.**	5	**Run No.**	6
Tool Model	COMPROBE G-N	**Tool Model**	2DVA / QL DVA	**Tool Model**	
Tool SN	1107	**Tool SN**	6002 / 142201	**Tool SN**	
From	SURFACE	**From**	SURFACE	**From**	
To	1224.7 FT	**To**	1224.7 FT	**To**	
Recorded By	E. BEAM	**Recorded By**	E. BEAM	**Recorded By**	
Truck No	900 / 500	**Truck No**	900 / 500	**Truck No**	
Operation Check	03-27-18	**Operation Check**	03-27-18	**Operation Check**	
Calibration Check	N/A	**Calibration Check**	N/A	**Calibration Check**	
Time Logged	10:45 AM	**Time Logged**	11:30 AM	**Time Logged**	

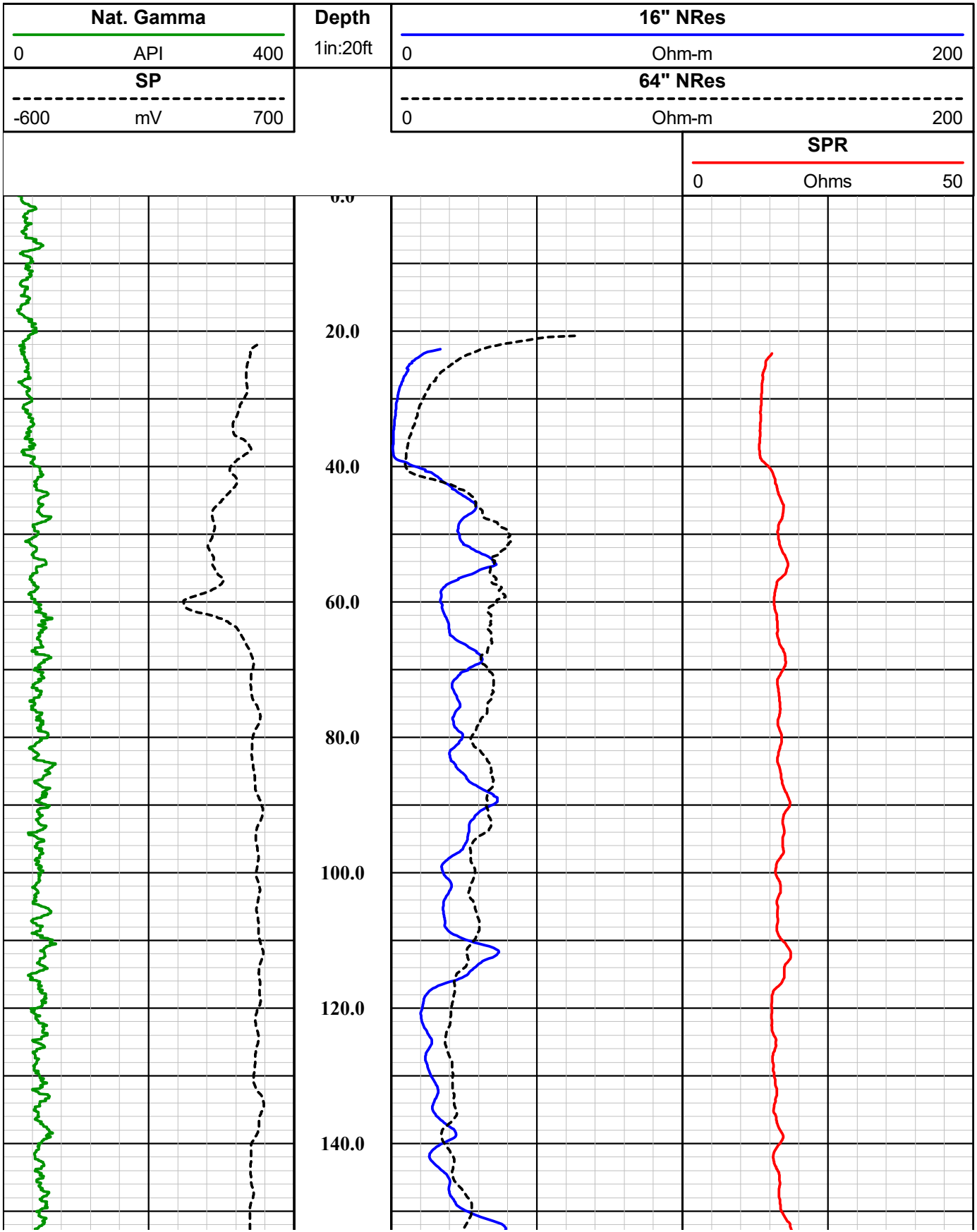
Additional Comments:

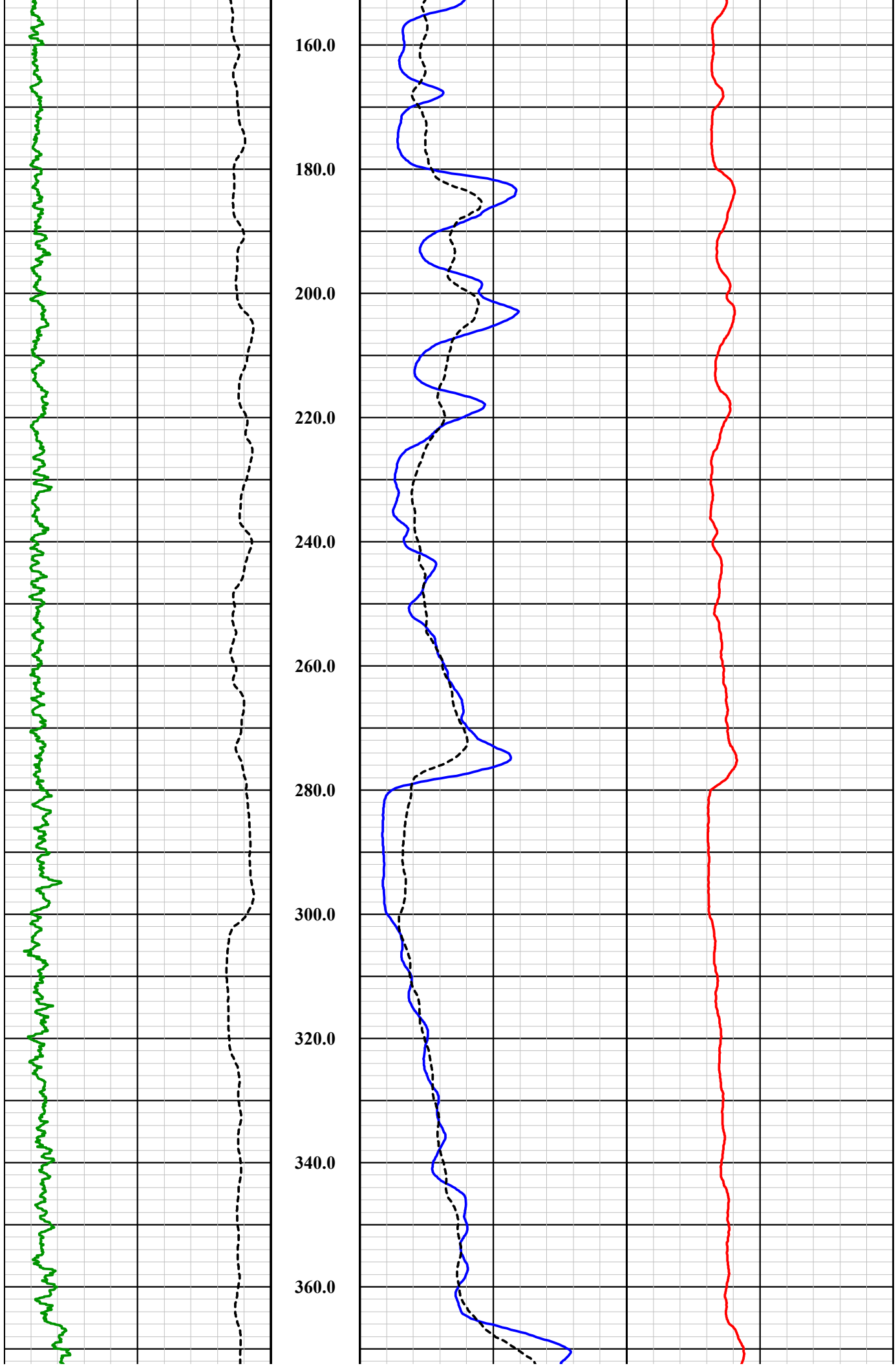
Caliper Arms Used: 15" **Calibration Points:** 14" & 12"

E-Log Calibration Range: 1 - 1,000 OHM-M **Calibration Points:** 1 & 1,000 OHM-M

Disclaimer:

All interpretations of log data are opinions based on inferences from electrical or other measurements. We do not guarantee the accuracy or correctness of any interpretations or recommendations and shall not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our employees or agents. These interpretations are also subject to our general terms and conditions set out in our current Service Invoice.

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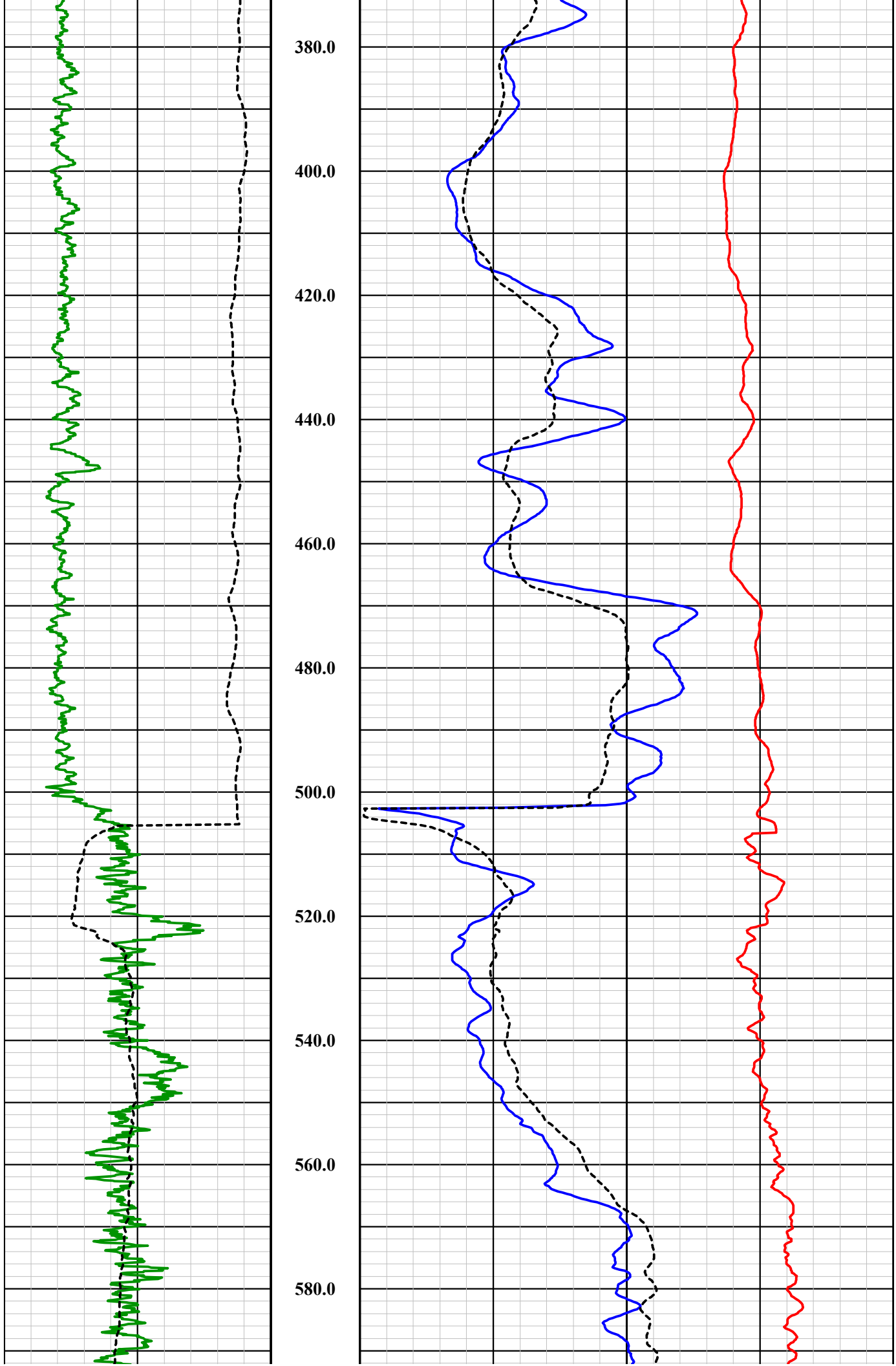
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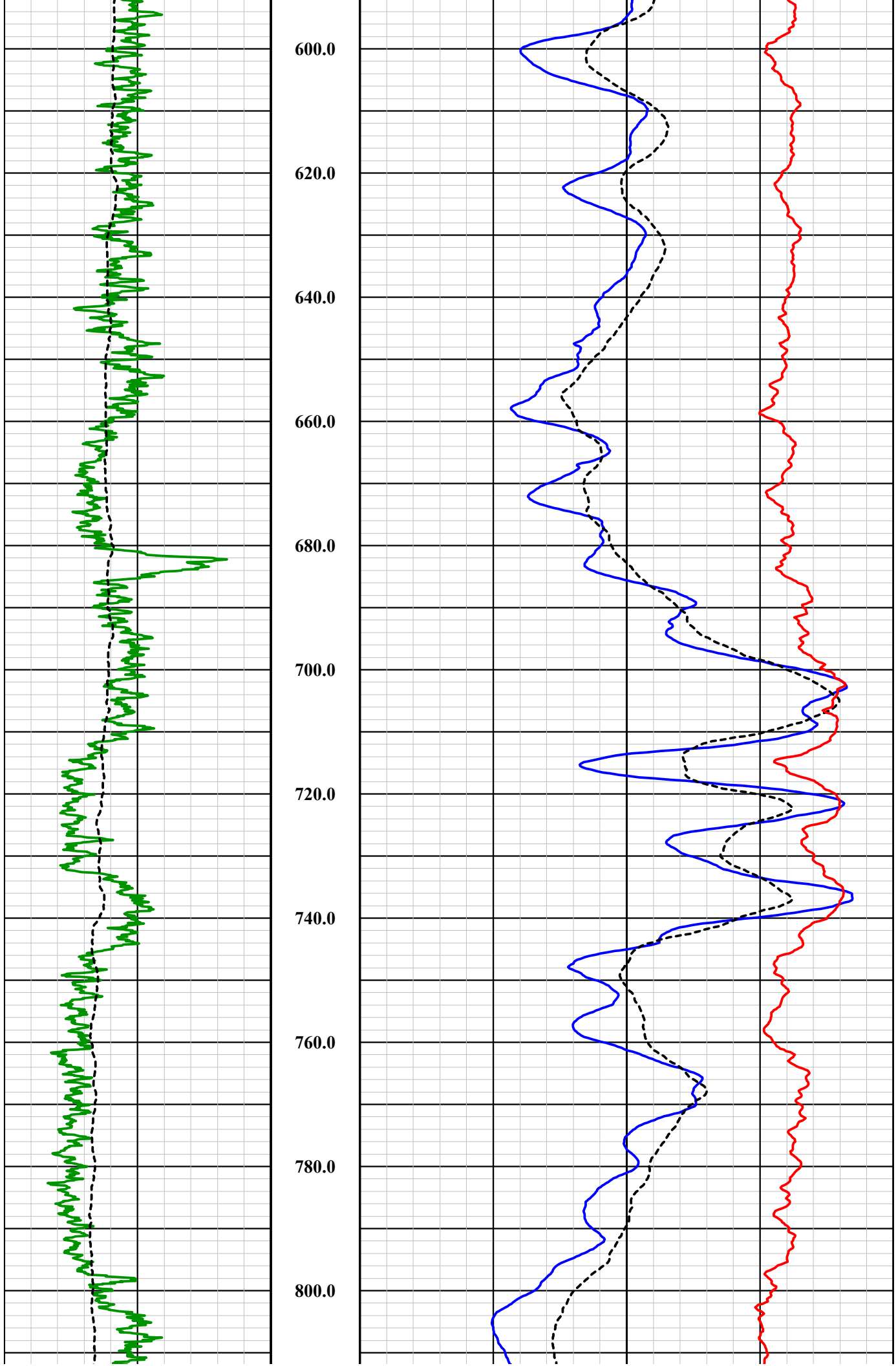
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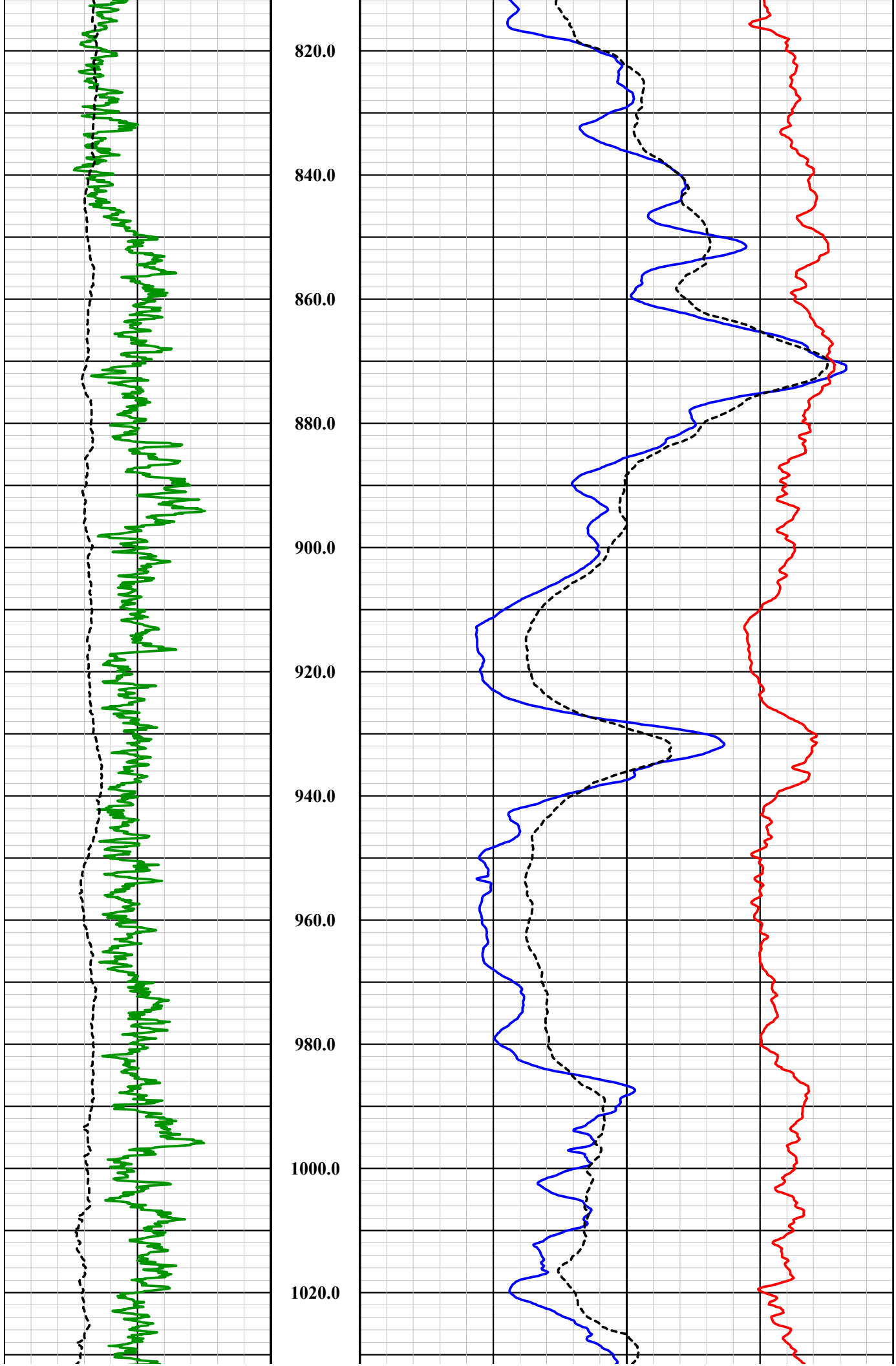
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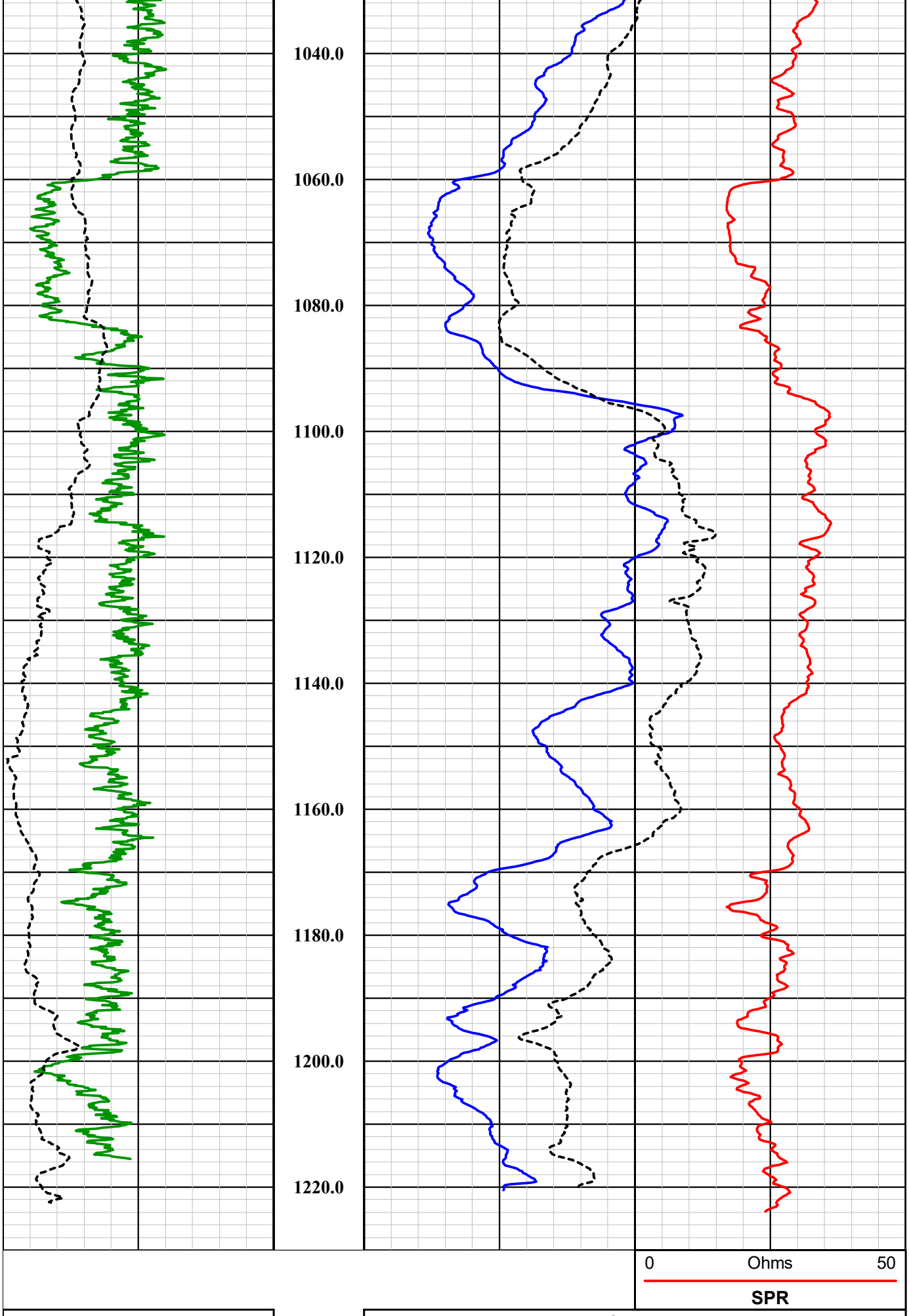
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Ohms
50
SPR
-600
mV
700
SP
0
Ohm-m
200
64" NRes
0
API
400
0
Ohm-m
200

0 API 400	1in:20ft	0 Ohm-m 200
Nat. Gamma	Depth	16" NRes

GeoVista E-Log Tool

Probe Top = Depth Ref.

Tool SN: 4035 & 4790

Bridle connects to wireline cablehead: Wireline armor is the B Electrode.

Four Conductor Probe Top

Bridle Electrode (N Electrode)

64" Normal Resistivity Electrode/Spontaneous Potential Electrode (M Electrode)

Probe Length = 2.3 m or 7.55 ft
Bridle Length = 10.0 m or 32.81 ft

Probe Weight = 7.0 kg or 15.4 lbs

Can only be collected in fluid

Isolation Bridle - Not shown in diagram but is necessary for operation

Electrode Measuring Points (from bottom of probe)
- **Spontaneous Potential (SP): 0.65 m or 2.13 ft**
- **16" Normal Resistivity (16" NRes): 0.50 m or 1.64 ft**
- **64" Normal Resistivity (64" NRes): 1.10 m or 3.61 ft**
- **Single Point Resistance (SPR): 0.25 m or 0.82 ft**

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

16" Normal Resistivity Electrode (M Electrode)

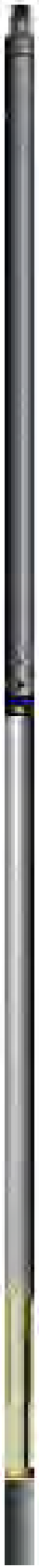
Current Electrode/Single Point Resistance (A Electrode)

1.65" or 42 mm Diameter

QL40 Gamma-Caliper-Temperature-Fluid Conductivity

Probe Top = Depth Ref.

Tool SN: 5613, 5979, 6161 & 6292



Four Conductor MSI Probe Top

Probe Length = 3.69 m or 12.12 ft
Probe Weight = 18.195 kg or 40.11 lbs

Caliper arms can only collect data logging up hole

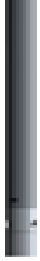
Fluid Temperature/Conductivity and Natural Gamma can be collected logging up and down hole

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

Natural Gamma Ray = 1.07 m (42.12 in)

3-Arm Caliper = 1.78 m (70.27 in)

Available Arm Sizes: 3", 9", and 15"



FTC (Fluid Temperature/Conductivity) = 0.78 m (30.71 in)

1.57" or 40.0 mm Diameter

Southwest Exploration Services, LLC

borehole geophysics & video services

Company	FLORENCE COPPER
Well	I-04
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final E-Log Summary

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY FLORENCE COPPER
WELL ID I-04
FIELD FLORENCE COPPER
COUNTY PINAL STATE ARIZONA

TYPE OF LOGS: GAMMA - NEUTRON
MORE: CALIPER
LOCATION

SEC TWP RGE

OTHER SERVICES
SONIC
E-LOG
DEVIATION
GAMMA-NEUTRON

PERMANENT DATUM		ELEVATION	K.B.
LOG MEAS. FROM	GROUND LEVEL	ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM	GROUND LEVEL		G.L.

DATE	11-14-17 / 03-27-18	TYPE FLUID IN HOLE	MUD
RUN No	5	MUD WEIGHT	N/A
TYPE LOG	GAMMA-NEUTRON-CALIPER	VISCOSITY	N/A
DEPTH-DRILLER	1225.0 FT	LEVEL	~ 53.5 FT
DEPTH-LOGGER	1224.7 FT	MAX. REC. TEMP.	27.0 DEG C
BTM LOGGED INTERVAL	1224.7 FT	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.2 FT
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #900 / #500
RECORDED BY / Logging Eng.	E. BEAM / E. TURNER	TOOL STRING/SN	COMPROBE GN SN 1107
WITNESSED BY	CHAD - H&A	LOG TIME:ON SITE/OFF SITE	6:20 AM

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT	24 IN	STEEL	SURFACE	40 FT
2	20 IN	40 FT	500 FT	14 IN	STEEL	SURFACE	500 FT
3	12 3/4 IN	500 FT	TOTAL DEPTH				

COMMENTS:

.

Tool Summary:

Date	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18
Run No.	1	**Run No.**	2	**Run No.**	3
Tool Model	QL COMBO TOOL	**Tool Model**	GEOVISTA E-LOG	**Tool Model**	MSI 60MM SONIC
Tool SN	4183 / 6292	**Tool SN**	4790 / 4035	**Tool SN**	5001 / 5050
From	SURFACE	**From**	SURFACE	**From**	SURFACE
To	1224.7 FT	**To**	1224.7 FT	**To**	1224.7 FT
Recorded By	E. BEAM	**Recorded By**	E. BEAM	**Recorded By**	E. BEAM
Truck No	900 / 500	**Truck No**	900 / 500	**Truck No**	900 / 500
Operation Check	03-27-18	**Operation Check**	03-27-18	**Operation Check**	03-27-18
Calibration Check	03-27-18	**Calibration Check**	N/A	**Calibration Check**	N/A
Time Logged	8:00 AM	**Time Logged**	9:10 AM	**Time Logged**	9:45 AM

Date	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18	**Date**	
Run No.	4	**Run No.**	5	**Run No.**	6
Tool Model	COMPROBE G-N	**Tool Model**	2DVA / QL DVA	**Tool Model**	
Tool SN	1107	**Tool SN**	6002 / 142201	**Tool SN**	
From	SURFACE	**From**	SURFACE	**From**	
To	1224.7 FT	**To**	1224.7 FT	**To**	
Recorded By	E. BEAM	**Recorded By**	E. BEAM	**Recorded By**	
Truck No	900 / 500	**Truck No**	900 / 500	**Truck No**	
Operation Check	03-27-18	**Operation Check**	03-27-18	**Operation Check**	
Calibration Check	N/A	**Calibration Check**	N/A	**Calibration Check**	
Time Logged	10:45 AM	**Time Logged**	11:30 AM	**Time Logged**	

Additional Comments:

Caliper Arms Used: 15" **Calibration Points:** 14" & 12"

E-Log Calibration Range: 1 - 1,000 OHM-M **Calibration Points:** 1 & 1,000 OHM-M

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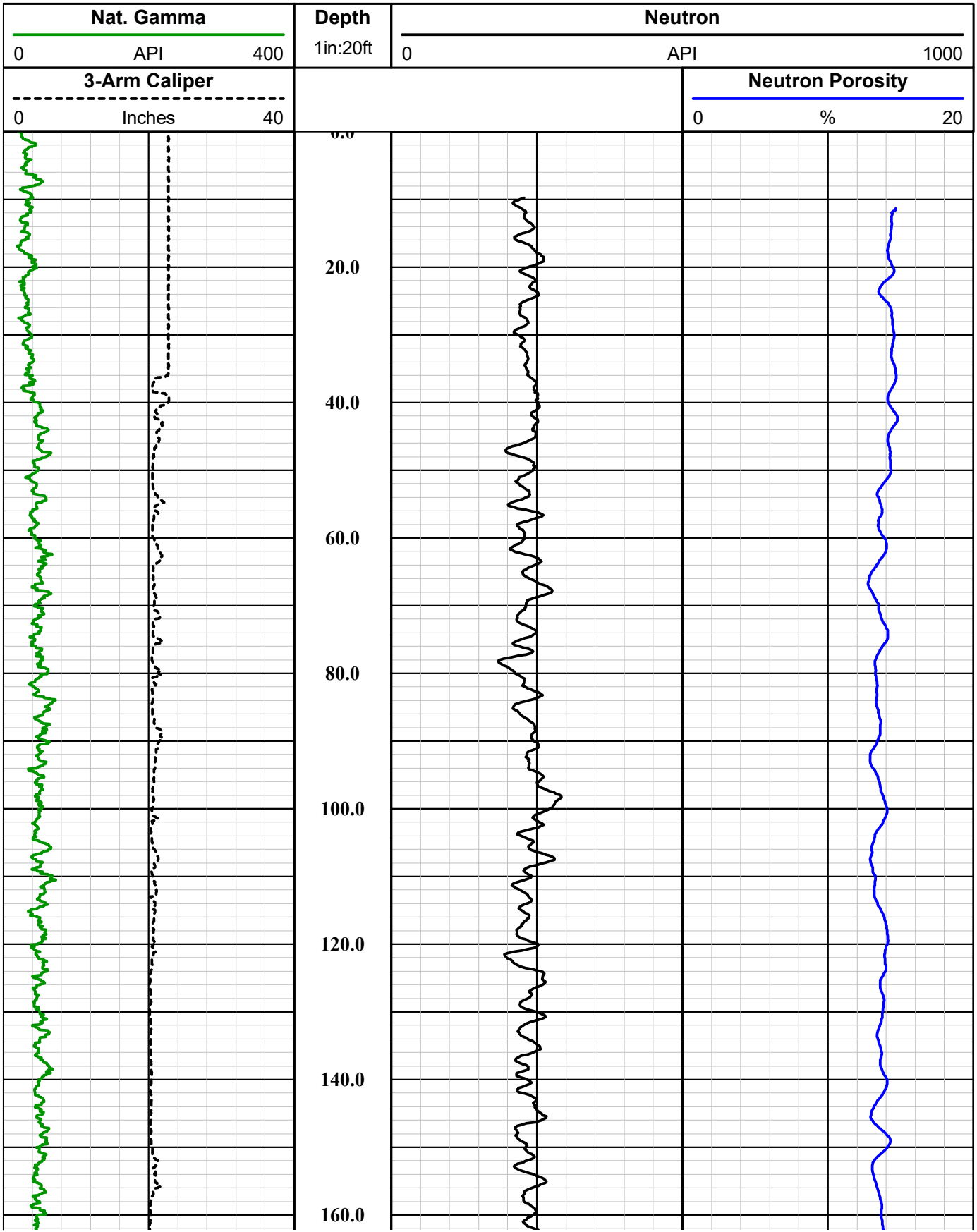

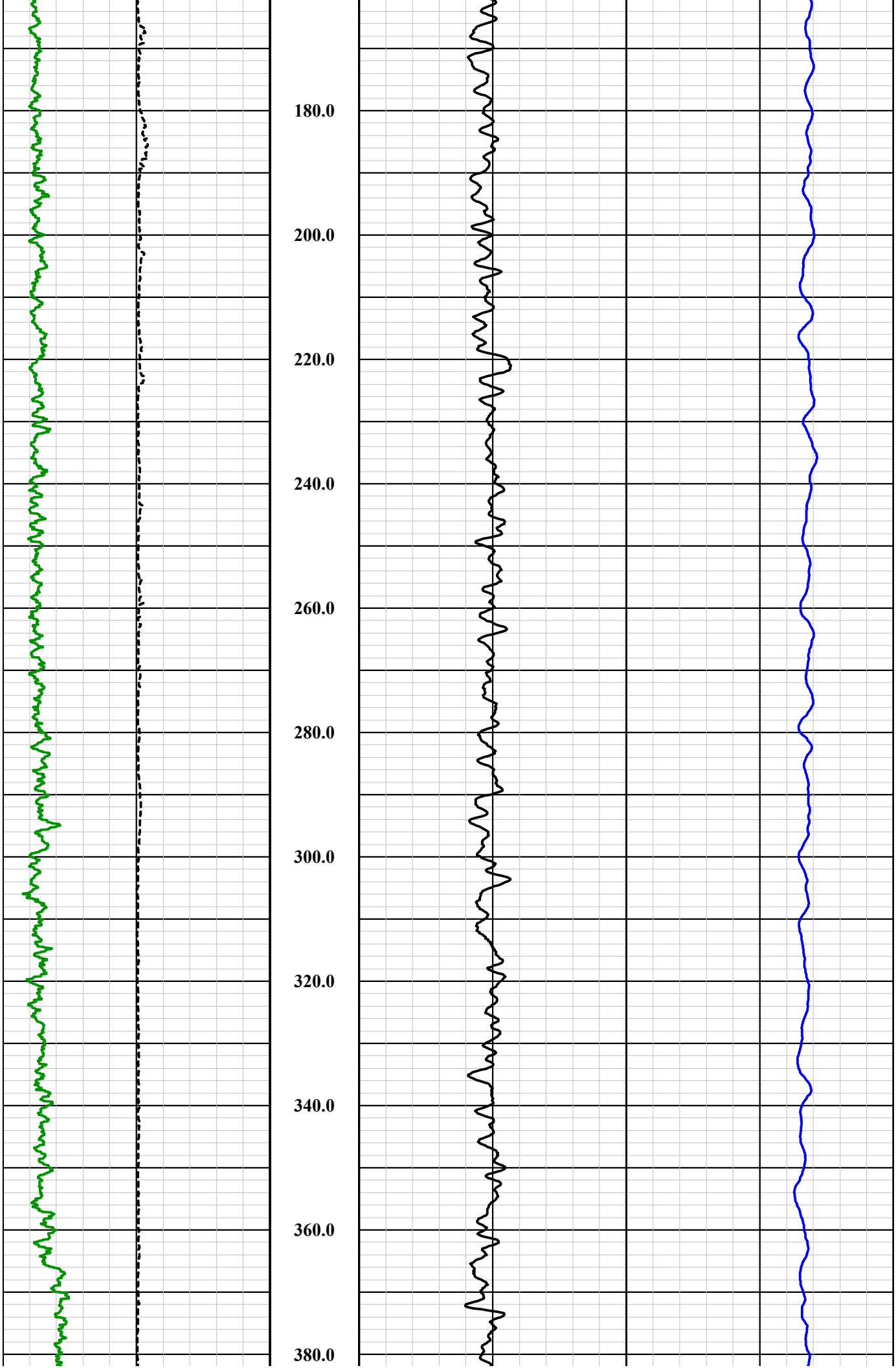
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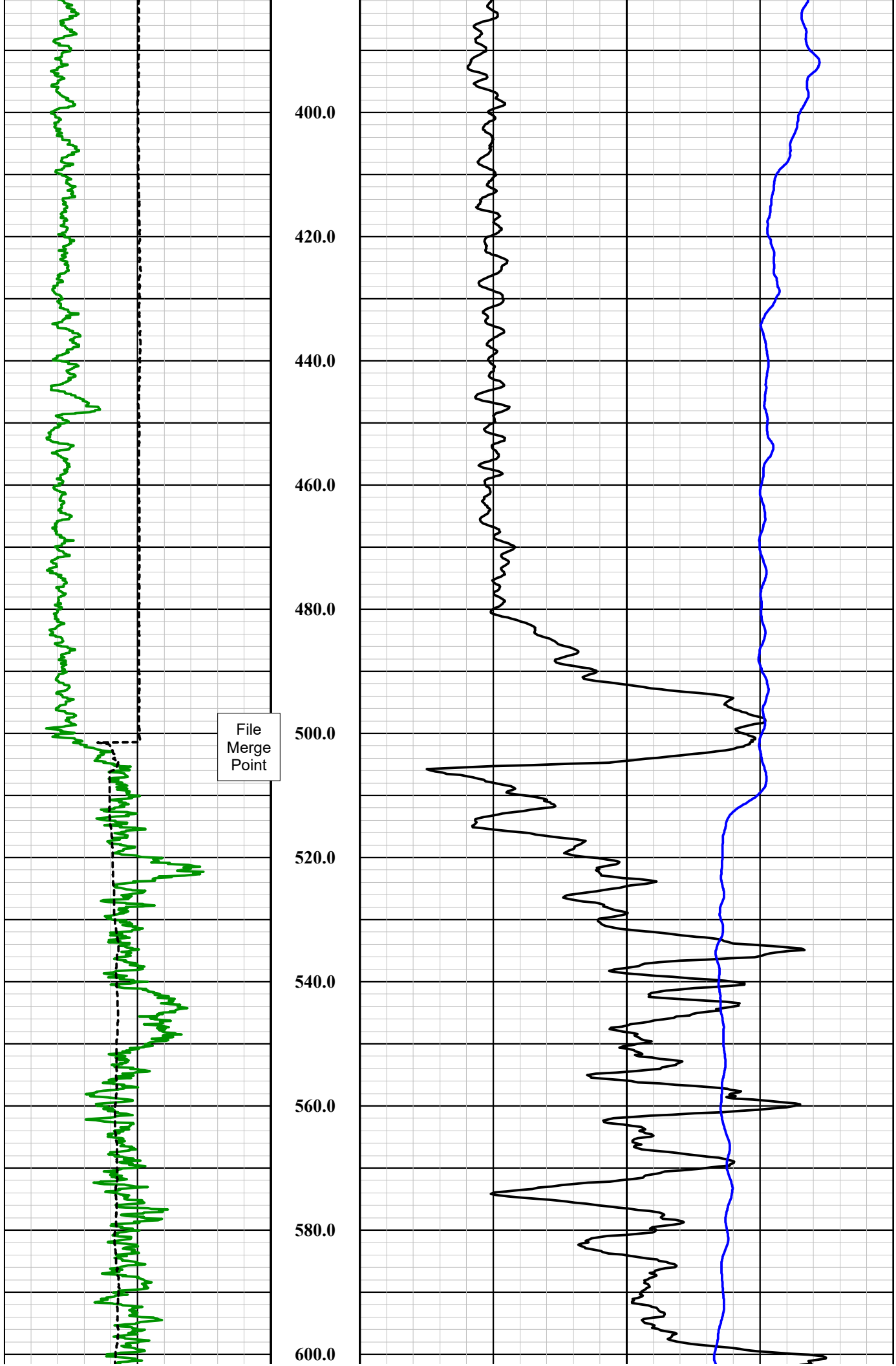
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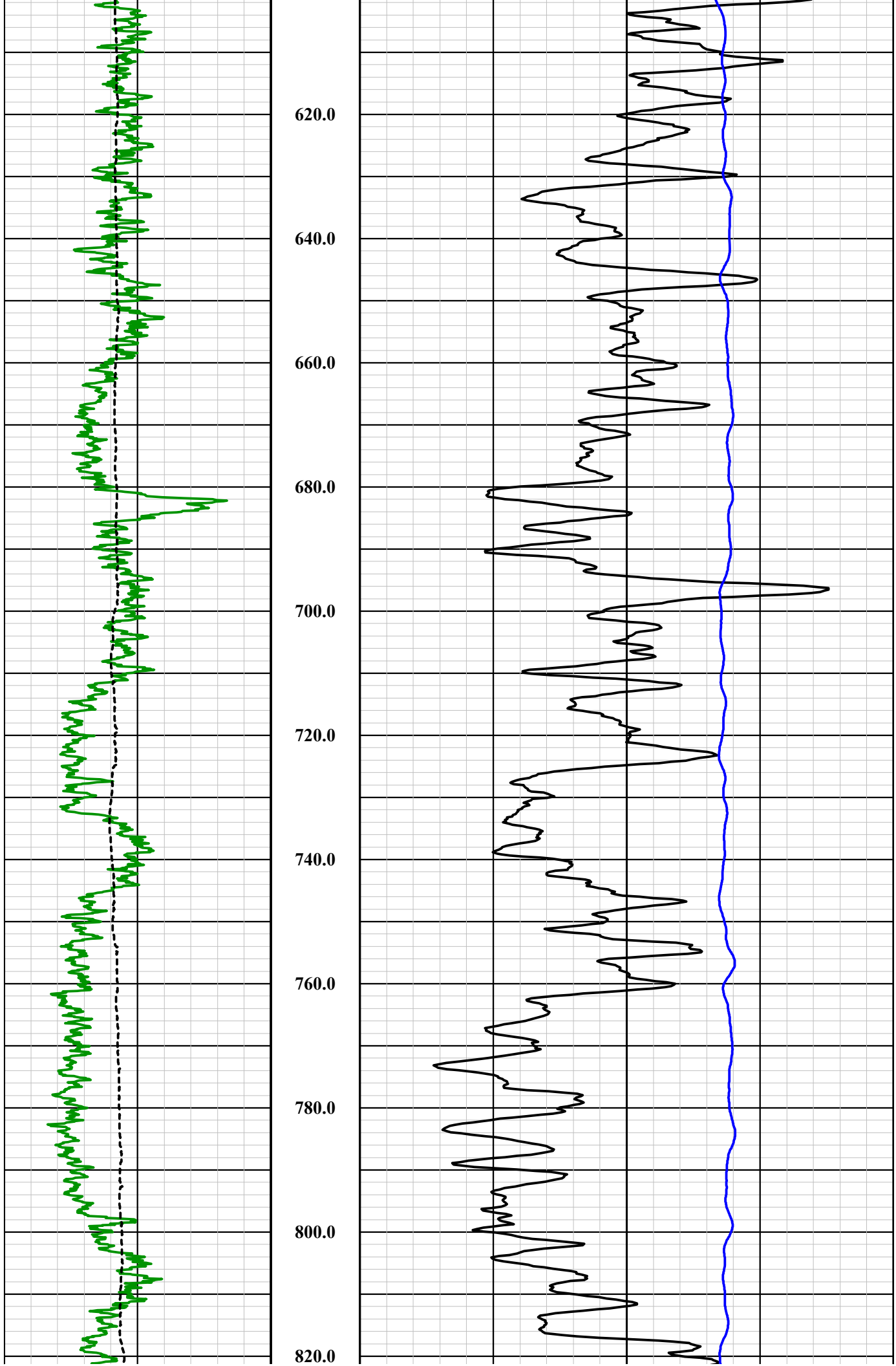
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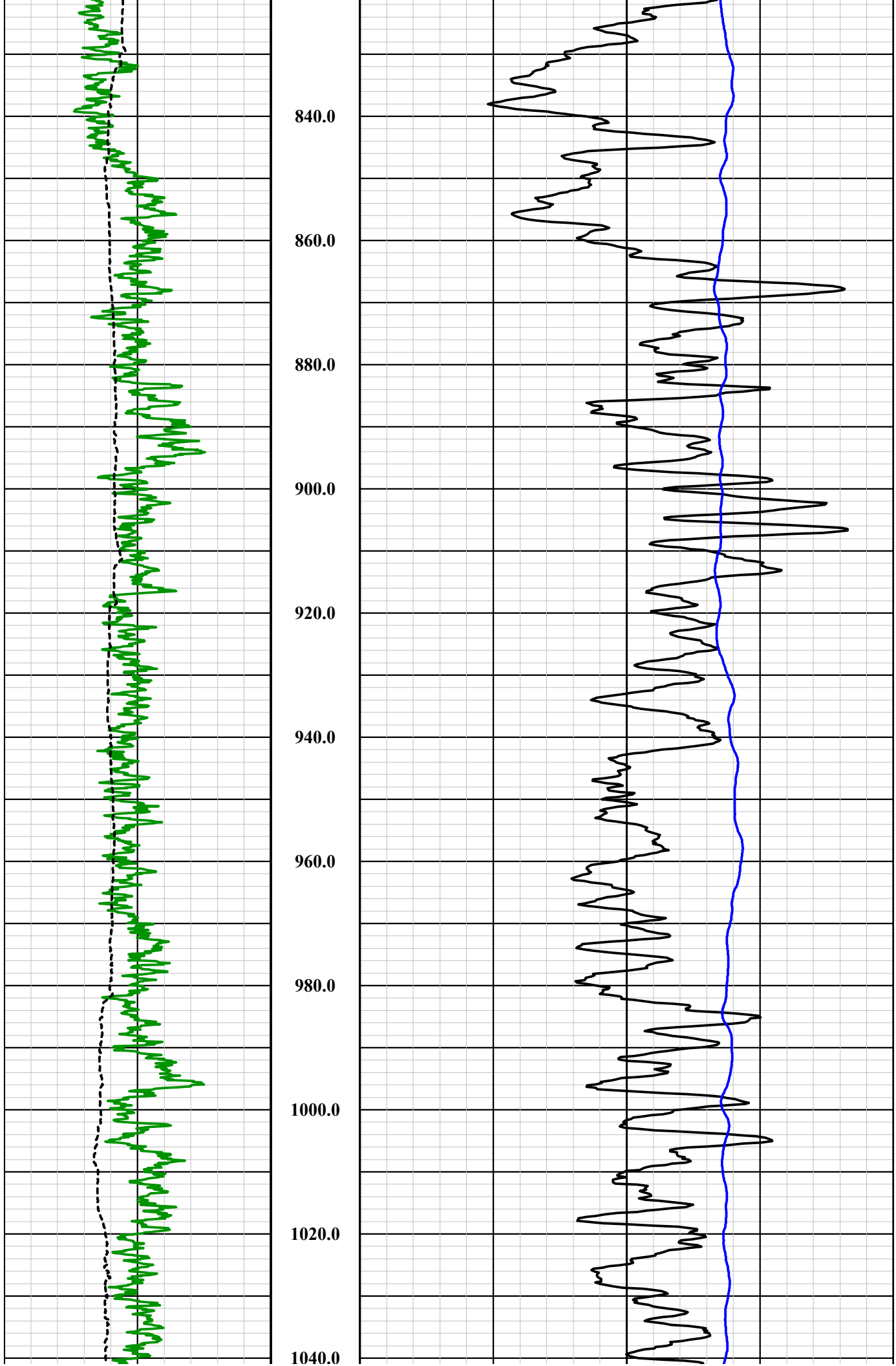
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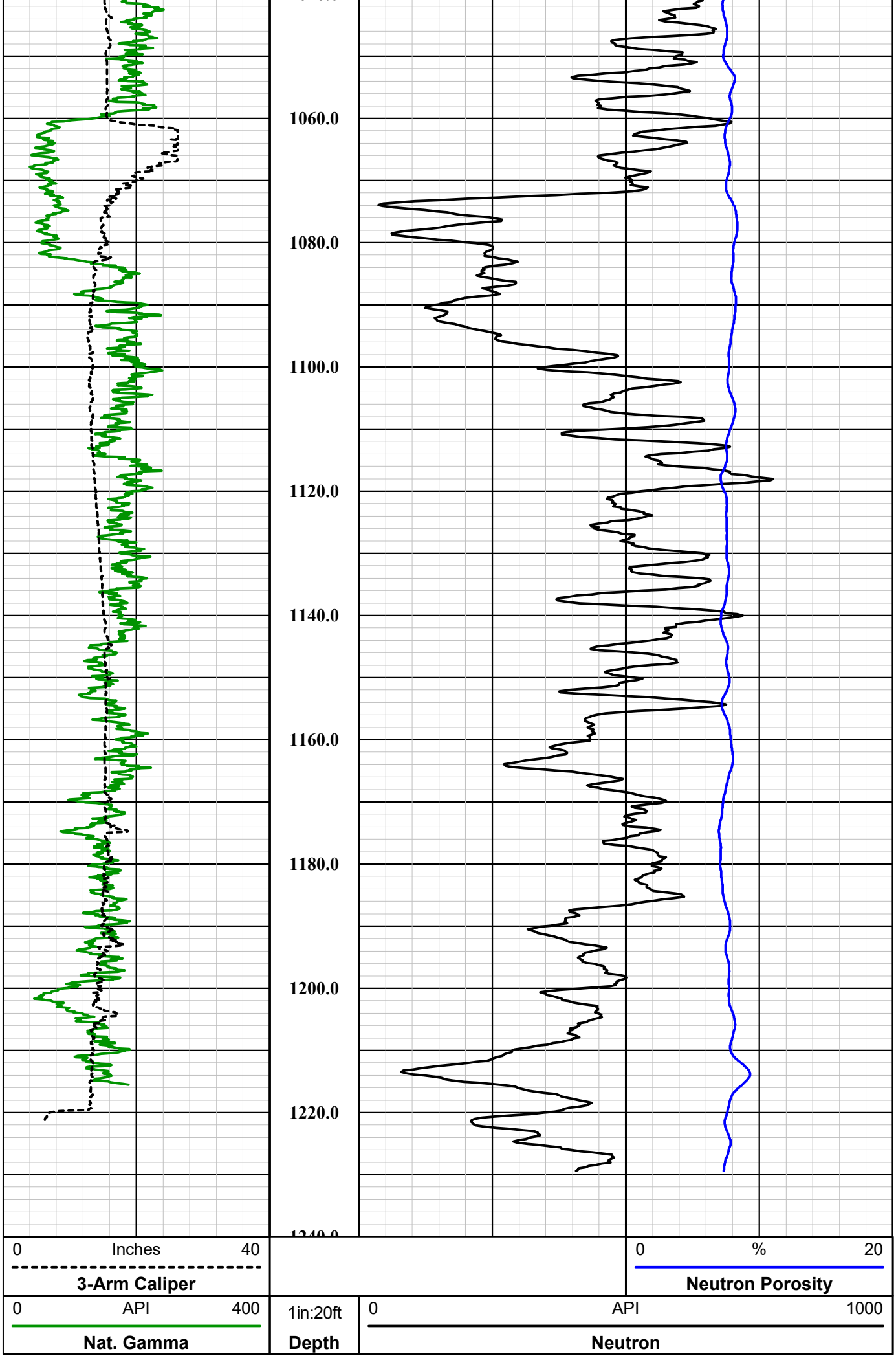
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1200.0
1220.0
0
Inches
40
3-Arm Caliper
0
API
400
Nat. Gamma
1in:20ft
Depth
0
%
20
Neutron Porosity
0
API
1000
Neutron

Comprobe Gamma-Neutron

Probe Top = Depth Ref.

Tool SN: 1107 & 3555

Four Conductor Probe Top

Probe Length = 2.82 m or 9.25 ft
Probe Weight = 18.1 kg or 40.14 lbs

Gamma Detector = 0.66 m (26 in)

Temperature Rating: 148.9 Deg C (300 Deg F)
Presure Rating: 689.5 bar (10,000 psi)

Neutron Detector = 2.61 m (102.8 in)

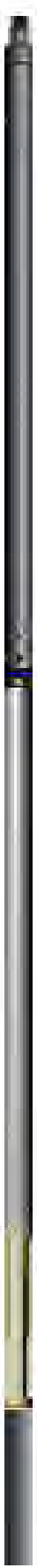
Source

1.625" or 41.275 mm Diameter

QL40 Gamma-Caliper-Temperature-Fluid Conductivity

Probe Top = Depth Ref.

Tool SN: 5613, 5979, 6161 & 6292



Four Conductor MSI Probe Top

Probe Length = 3.69 m or 12.12 ft
Probe Weight = 18.195 kg or 40.11 lbs

Caliper arms can only collect data logging up hole

Fluid Temperature/Conductivity and Natural Gamma can be collected logging up and down hole

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

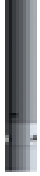
Natural Gamma Ray = 1.07 m (42.12 in)

3-Arm Caliper = 1.78 m (70.27 in)

Available Arm Sizes: 3", 9", and 15"

FTC (Fluid Temperature/Conductivity) = 0.78 m (30.71 in)

PTC (Fluid Temperature/Conductivity) = 0.78 in (30.71 in)



1.57" or 40.0 mm Diameter

Southwest Exploration Services, LLC
borehole geophysics & video services

Company	FLORENCE COPPER
Well	I-04
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final Gamma - Neutron Summary

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY FLORENCE COPPER
WELL ID I-04
FIELD FLORENCE COPPER
COUNTY PINAL STATE ARIZONA

TYPE OF LOGS: GAMMA - CALIPER
MORE: TEMP / FLUID COND.

LOCATION

SEC TWP RGE

OTHER SERVICES
SONIC
E-LOG
DEVIATION
GAMMA-NEUTRON

PERMANENT DATUM		ELEVATION	K.B.
LOG MEAS. FROM	GROUND LEVEL	ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM	GROUND LEVEL		G.L.

DATE	11-14-17 / 03-27-18	TYPE FLUID IN HOLE	MUD
RUN No	1	MUD WEIGHT	N/A
TYPE LOG	GAMMA-CALIPER-FTC	VISCOSITY	N/A
DEPTH-DRILLER	1225.0 FT	LEVEL	~ 53.5 FT
DEPTH-LOGGER	1224.7 FT	MAX. REC. TEMP.	27.0 DEG C
BTM LOGGED INTERVAL	1224.7 FT	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.1 FT
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #900 / #500
RECORDED BY / Logging Eng.	E. BEAM / E. TURNER	TOOL STRING/SN	QL COMBO TOOL SN 6292
WITNESSED BY	CHAD - H&A	LOG TIME:ON SITE/OFF SITE	6:20 AM

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT	24 IN	STEEL	SURFACE	40 FT
2	20 IN	40 FT	500 FT	14 IN	STEEL	SURFACE	500 FT
3	12 3/4 IN	500 FT	TOTAL DEPTH				

COMMENTS:

.

Tool Summary:

Date	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18
Run No.	1	**Run No.**	2	**Run No.**	3
Tool Model	QL COMBO TOOL	**Tool Model**	GEOVISTA E-LOG	**Tool Model**	MSI 60MM SONIC
Tool SN	4183 / 6292	**Tool SN**	4790 / 4035	**Tool SN**	5001 / 5050
From	SURFACE	**From**	SURFACE	**From**	SURFACE
To	1224.7 FT	**To**	1224.7 FT	**To**	1224.7 FT
Recorded By	E. BEAM	**Recorded By**	E. BEAM	**Recorded By**	E. BEAM
Truck No	900 / 500	**Truck No**	900 / 500	**Truck No**	900 / 500
Operation Check	03-27-18	**Operation Check**	03-27-18	**Operation Check**	03-27-18
Calibration Check	03-27-18	**Calibration Check**	N/A	**Calibration Check**	N/A
Time Logged	8:00 AM	**Time Logged**	9:10 AM	**Time Logged**	9:45 AM

Date	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18	**Date**	
Run No.	4	**Run No.**	5	**Run No.**	6
Tool Model	COMPROBE G-N	**Tool Model**	2DVA / QL DVA	**Tool Model**	
Tool SN	1107	**Tool SN**	6002 / 142201	**Tool SN**	
From	SURFACE	**From**	SURFACE	**From**	
To	1224.7 FT	**To**	1224.7 FT	**To**	
Recorded By	E. BEAM	**Recorded By**	E. BEAM	**Recorded By**	
Truck No	900 / 500	**Truck No**	900 / 500	**Truck No**	
Operation Check	03-27-18	**Operation Check**	03-27-18	**Operation Check**	
Calibration Check	N/A	**Calibration Check**	N/A	**Calibration Check**	
Time Logged	10:45 AM	**Time Logged**	11:30 AM	**Time Logged**	

Additional Comments:

Caliper Arms Used: 15" **Calibration Points:** 14" & 12"

E-Log Calibration Range: 1 - 1,000 OHM-M **Calibration Points:** 1 & 1,000 OHM-M

FLUID CONDUCTIVITY CONVERTED TO FLUID RESISTIVITY TO MATCH UPPER SECTION.

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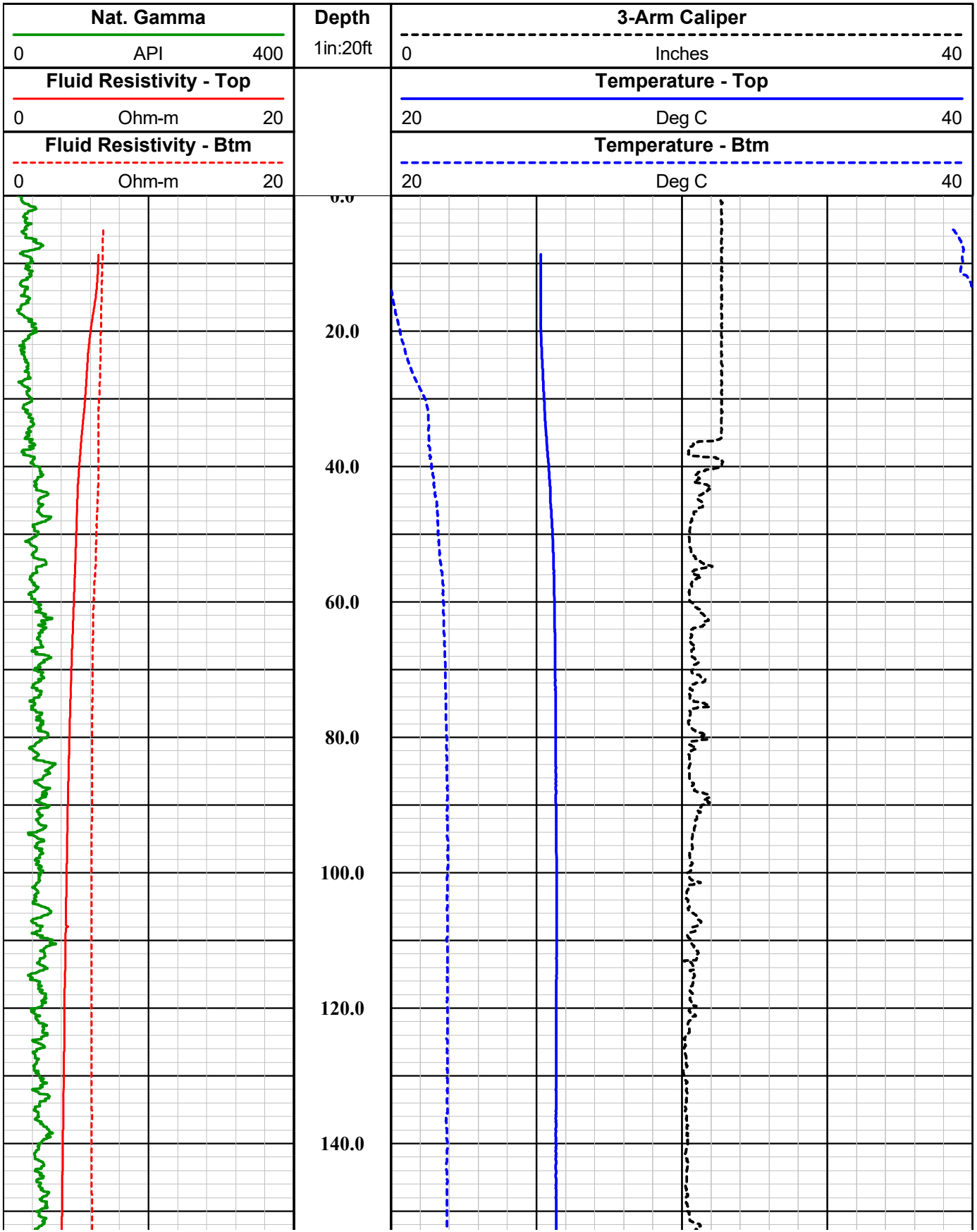

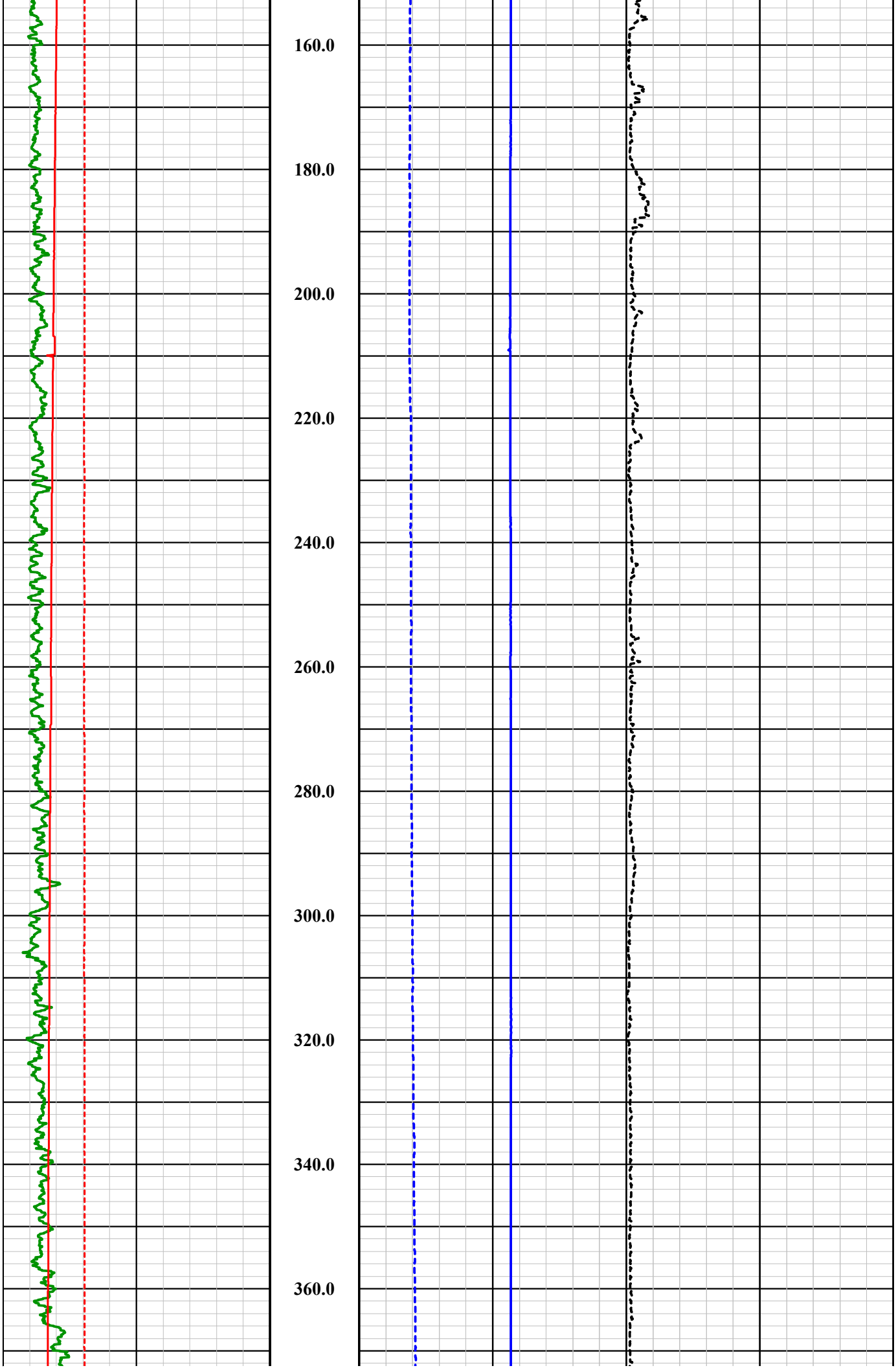
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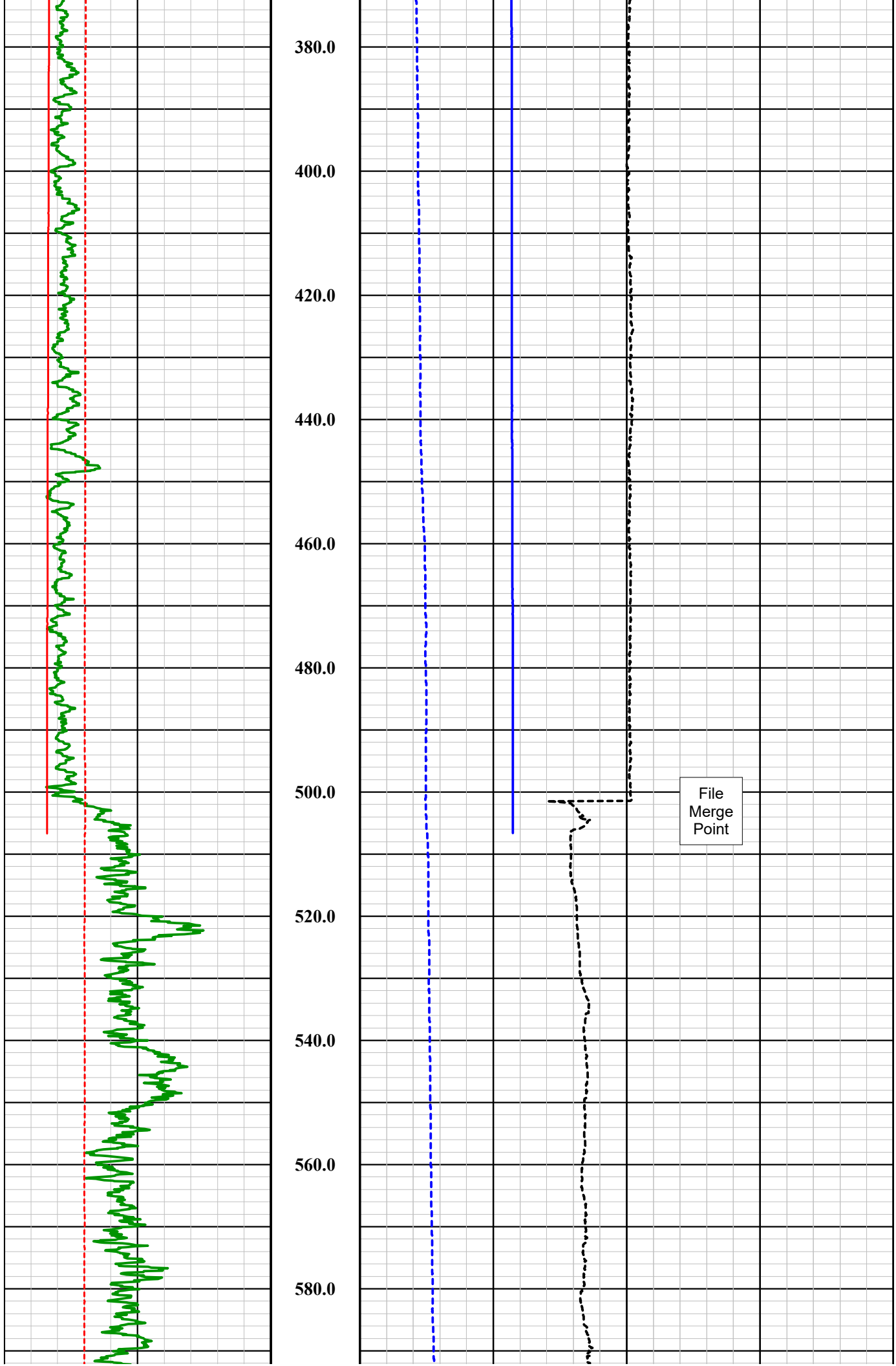
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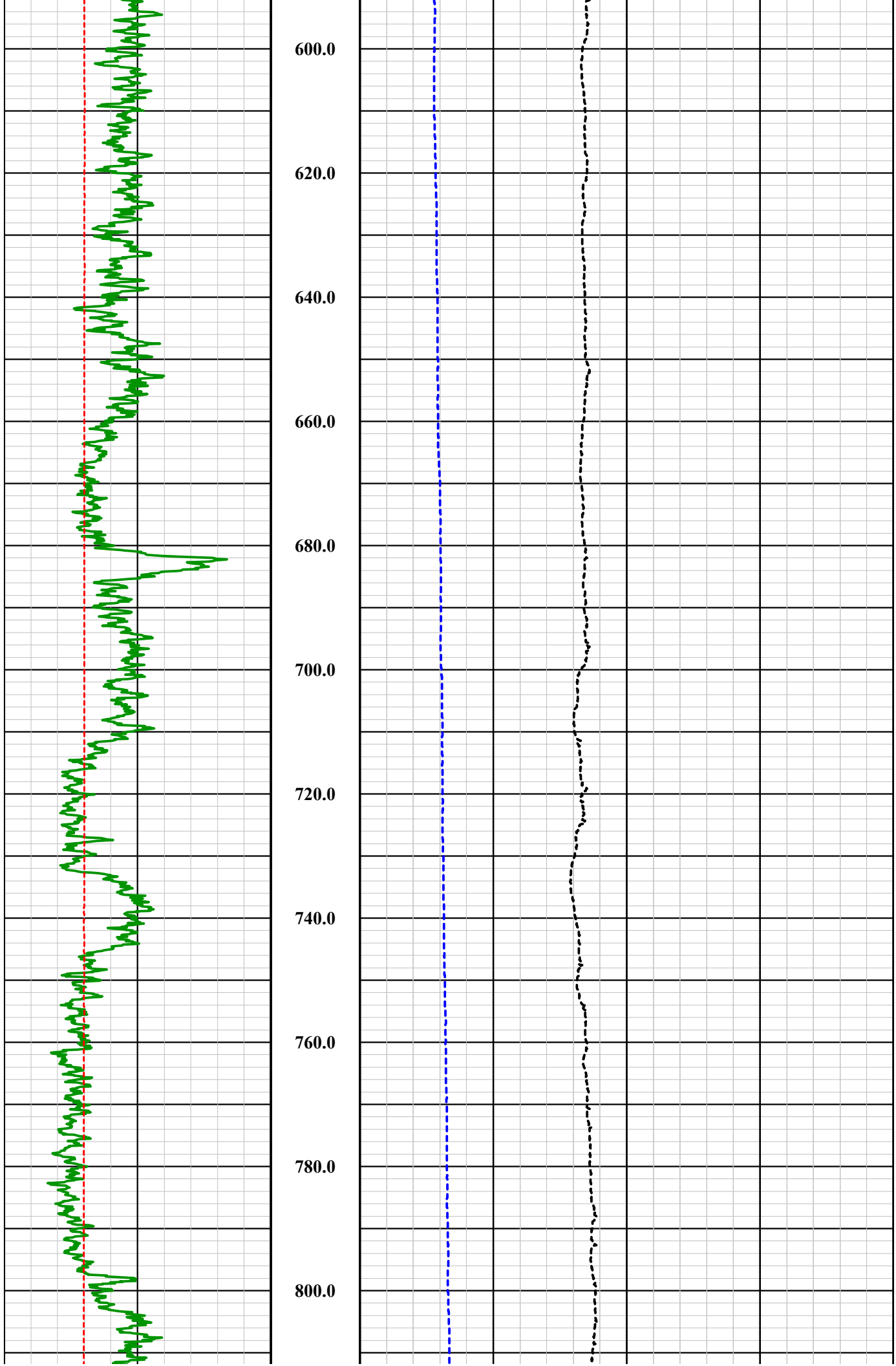
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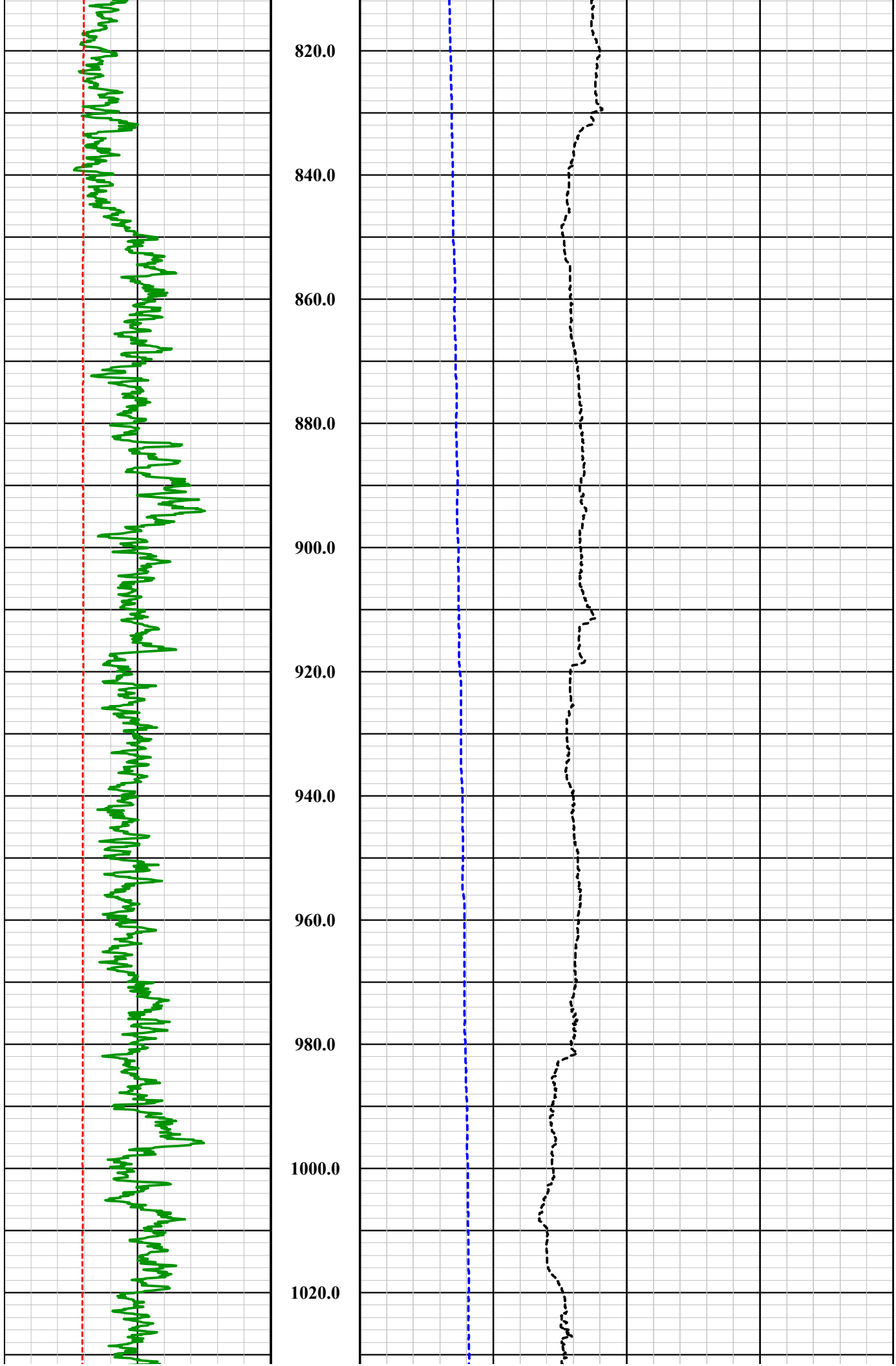
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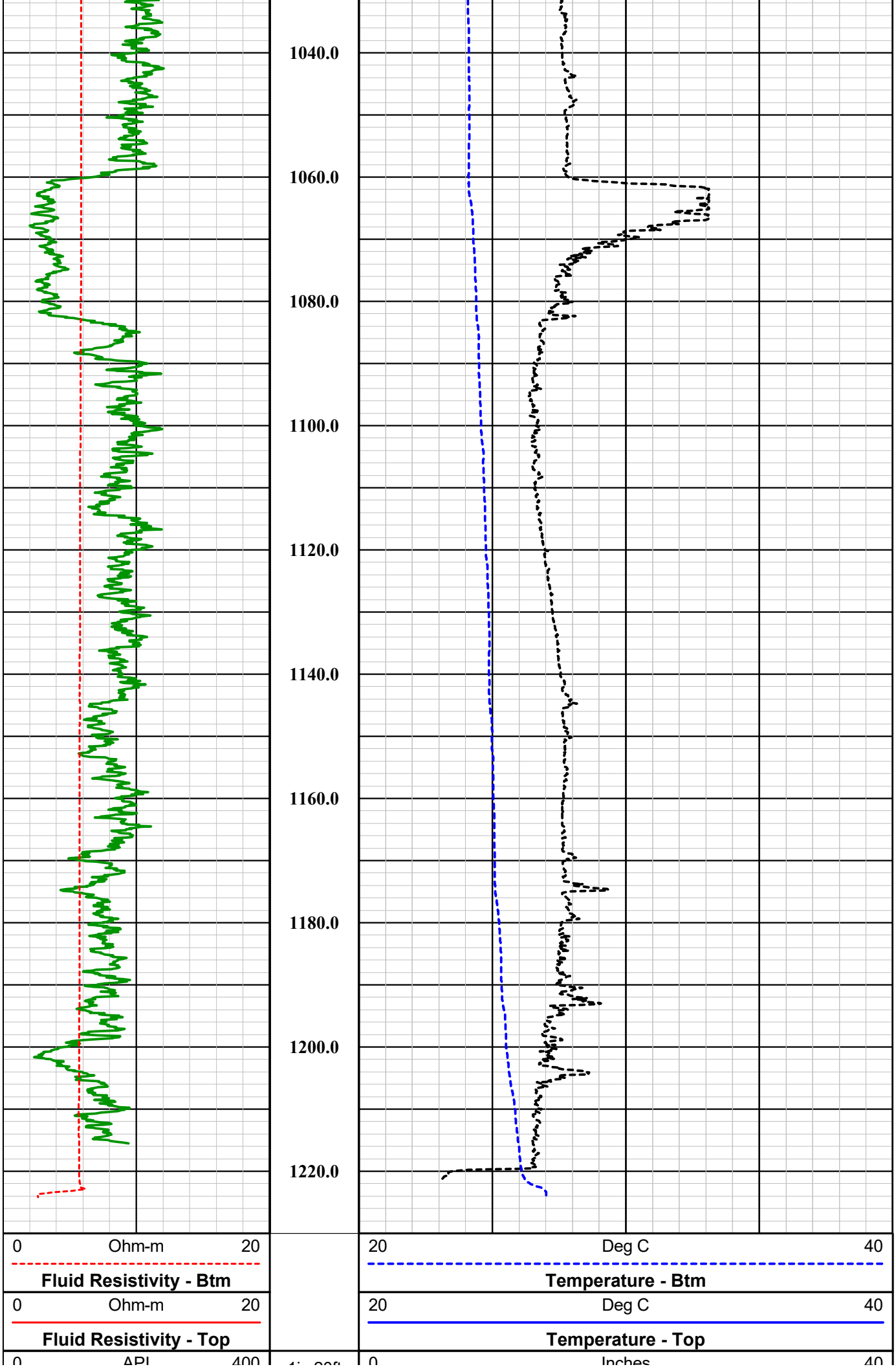
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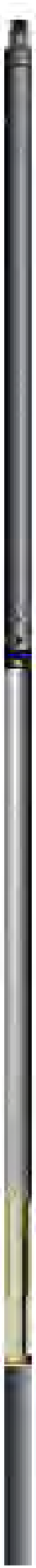
Ohm-m
20
Fluid Resistivity - Btm
0
Ohm-m
20
Fluid Resistivity - Top
0
API
400
20
Deg C
40
Temperature - Btm
20
Deg C
40
Temperature - Top
0
Inches
40

Nat. Gamma	Depth	3-Arm Caliper
0 API 400	1in:20ft	0 Inches 40

QL40 Gamma-Caliper-Temperature-Fluid Conductivity

Probe Top = Depth Ref.

Tool SN: 5613, 5979, 6161 & 6292



Four Conductor MSI Probe Top

Probe Length = 3.69 m or 12.12 ft
Probe Weight = 18.195 kg or 40.11 lbs

Caliper arms can only collect data logging up hole

Fluid Temperature/Conductivity and Natural Gamma can be collected logging up and down hole

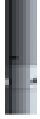
Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

Natural Gamma Ray = 1.07 m (42.12 in)

3-Arm Caliper = 1.78 m (70.27 in)

Available Arm Sizes: 3", 9", and 15"

FTC (Fluid Temperature/Conductivity) = 0.78 m (30.71 in)



1.57" or 40.0 mm Diameter

Southwest Exploration Services, LLC
borehole geophysics & video services

Company	FLORENCE COPPER
Well	I-04
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final GCFTC Summary

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY FLORENCE COPPER
WELL ID I-04
FIELD FLORENCE COPPER
COUNTY PINAL STATE ARIZONA

TYPE OF LOGS: 60MM SONIC
MORE: GAMMA - CALIPER
LOCATION

SEC TWP RGE

OTHER SERVICES
TEMP / FLUID COND.
E-LOG
DEVIATION
GAMMA-NEUTRON

PERMANENT DATUM ELEVATION K.B.
LOG MEAS. FROM GROUND LEVEL ABOVE PERM. DATUM D.F.
DRILLING MEAS. FROM GROUND LEVEL G.L.

DATE	11-14-17 / 03-27-18	TYPE FLUID IN HOLE	MUD
RUN No	1	MUD WEIGHT	N/A
TYPE LOG	SONIC-GAMMA-CALIPER	VISCOSITY	N/A
DEPTH-DRILLER	1225.0 FT	LEVEL	~ 53.5 FT
DEPTH-LOGGER	1224.7 FT	MAX. REC. TEMP.	27.0 DEG C
BTM LOGGED INTERVAL	1224.7 FT	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.25 FT
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #900 / #500
RECORDED BY / Logging Eng.	E. BEAM / E. TURNER	TOOL STRING/SN	MSI 60MM SONIC SN 5050
WITNESSED BY	CHAD - H&A	LOG TIME:ON SITE/OFF SITE	6:20 AM

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT	24 IN	STEEL	SURFACE	40 FT
2	20 IN	40 FT	500 FT	14 IN	STEEL	SURFACE	500 FT
3	12 3/4 IN	500 FT	TOTAL DEPTH				

COMMENTS:

.

Tool Summary:

Date	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18	**Date**	11-14-17 / 03-27-18
Run No.	1	**Run No.**	2	**Run No.**	3
Tool Model	QL COMBO TOOL	**Tool Model**	GEOVISTA E-LOG	**Tool Model**	MSI 60MM SONIC
Tool SN	4183 / 6292	**Tool SN**	4790 / 4035	**Tool SN**	5001 / 5050
From	SURFACE	**From**	SURFACE	**From**	SURFACE
To	1224.7 FT	**To**	1224.7 FT	**To**	1224.7 FT
Recorded By	E. BEAM	**Recorded By**	E. BEAM	**Recorded By**	E. BEAM
Truck No	900 / 500	**Truck No**	900 / 500	**Truck No**	900 / 500
Operation Check	03-27-18	**Operation Check**	03-27-18	**Operation Check**	03-27-18
Calibration Check	03-27-18	**Calibration Check**	N/A	**Calibration Check**	N/A
Time Logged	8:00 AM	**Time Logged**	9:10 AM	**Time Logged**	9:45 AM

Date	03-27-18	**Date**	03-27-18	**Date**	
Run No.	4	**Run No.**	5	**Run No.**	6
Tool Model	COMPROBE G-N	**Tool Model**	QL DEVIATION	**Tool Model**	
Tool SN	1107	**Tool SN**	142201	**Tool SN**	
From	SURFACE	**From**	SURFACE	**From**	
To	1224.7 FT	**To**	1224.7 FT	**To**	
Recorded By	E. BEAM	**Recorded By**	E. BEAM	**Recorded By**	
Truck No	900 / 500	**Truck No**	900 / 500	**Truck No**	
Operation Check	03-27-18	**Operation Check**	03-27-18	**Operation Check**	
Calibration Check	N/A	**Calibration Check**	N/A	**Calibration Check**	
Time Logged	10:45 AM	**Time Logged**	11:30 AM	**Time Logged**	

Additional Comments:

Caliper Arms Used: 15" **Calibration Points:** 14" & 12"

E-Log Calibration Range: 1 - 1,000 OHM-M **Calibration Points:** 1 & 1,000 OHM-M

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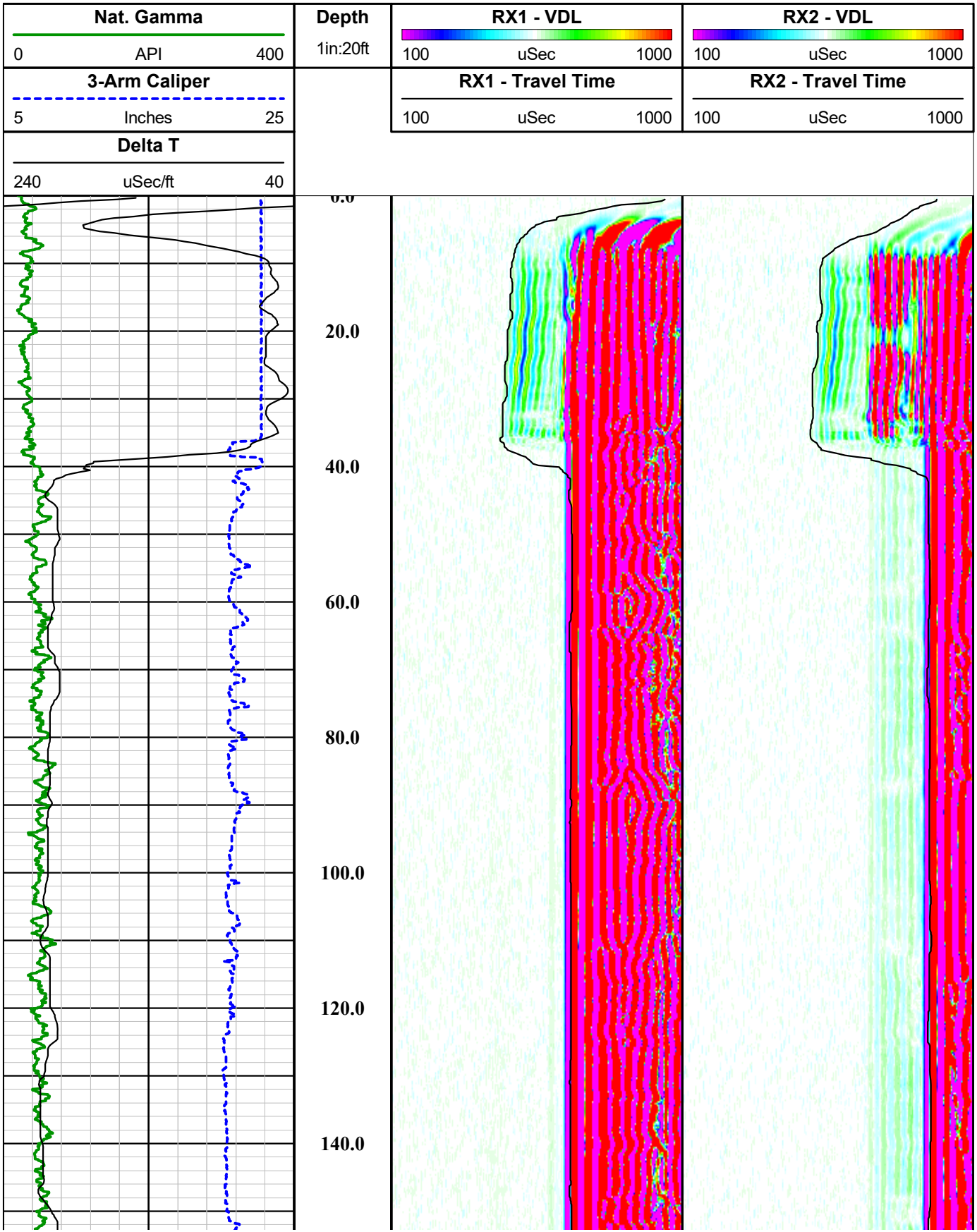

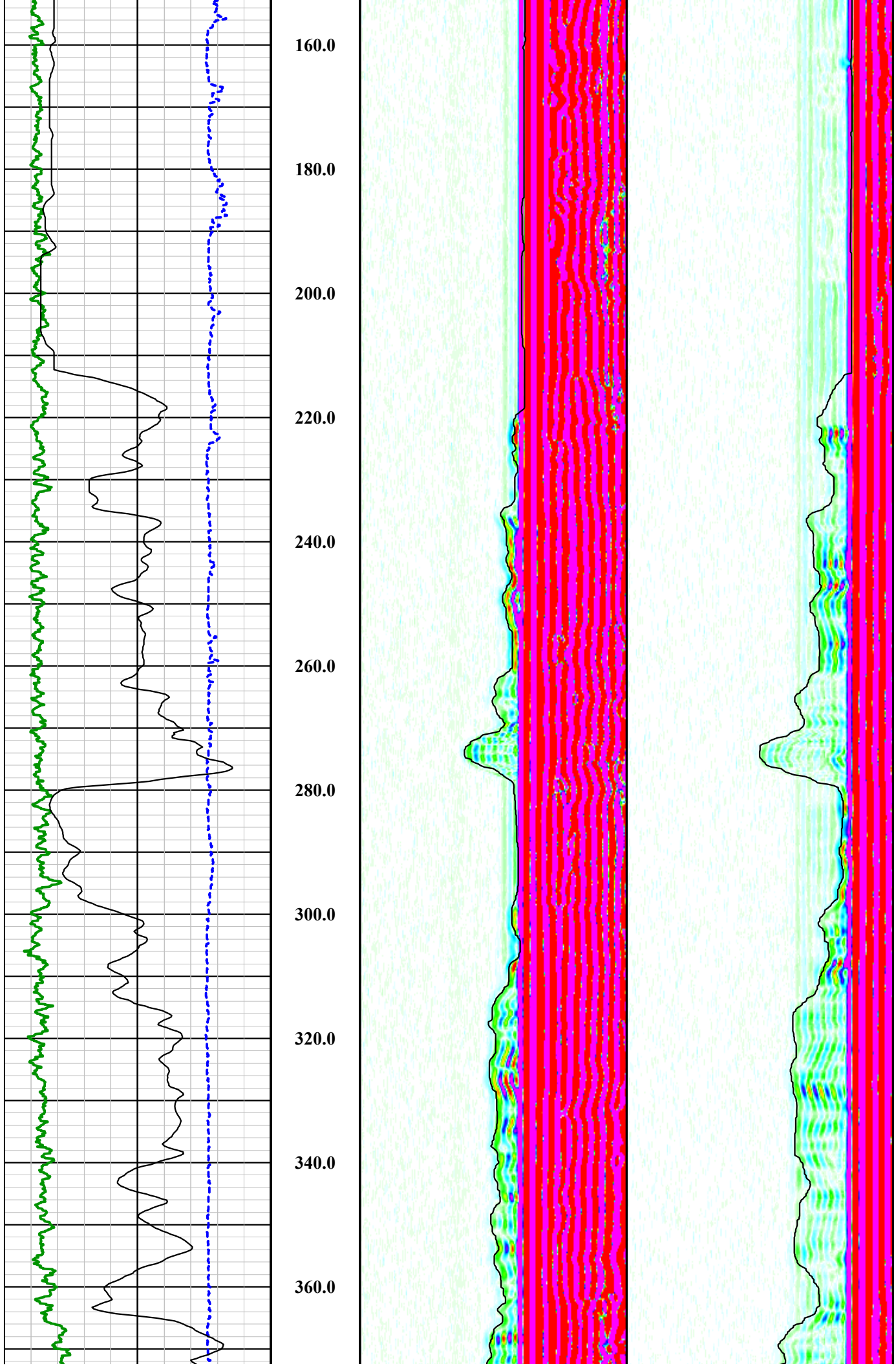
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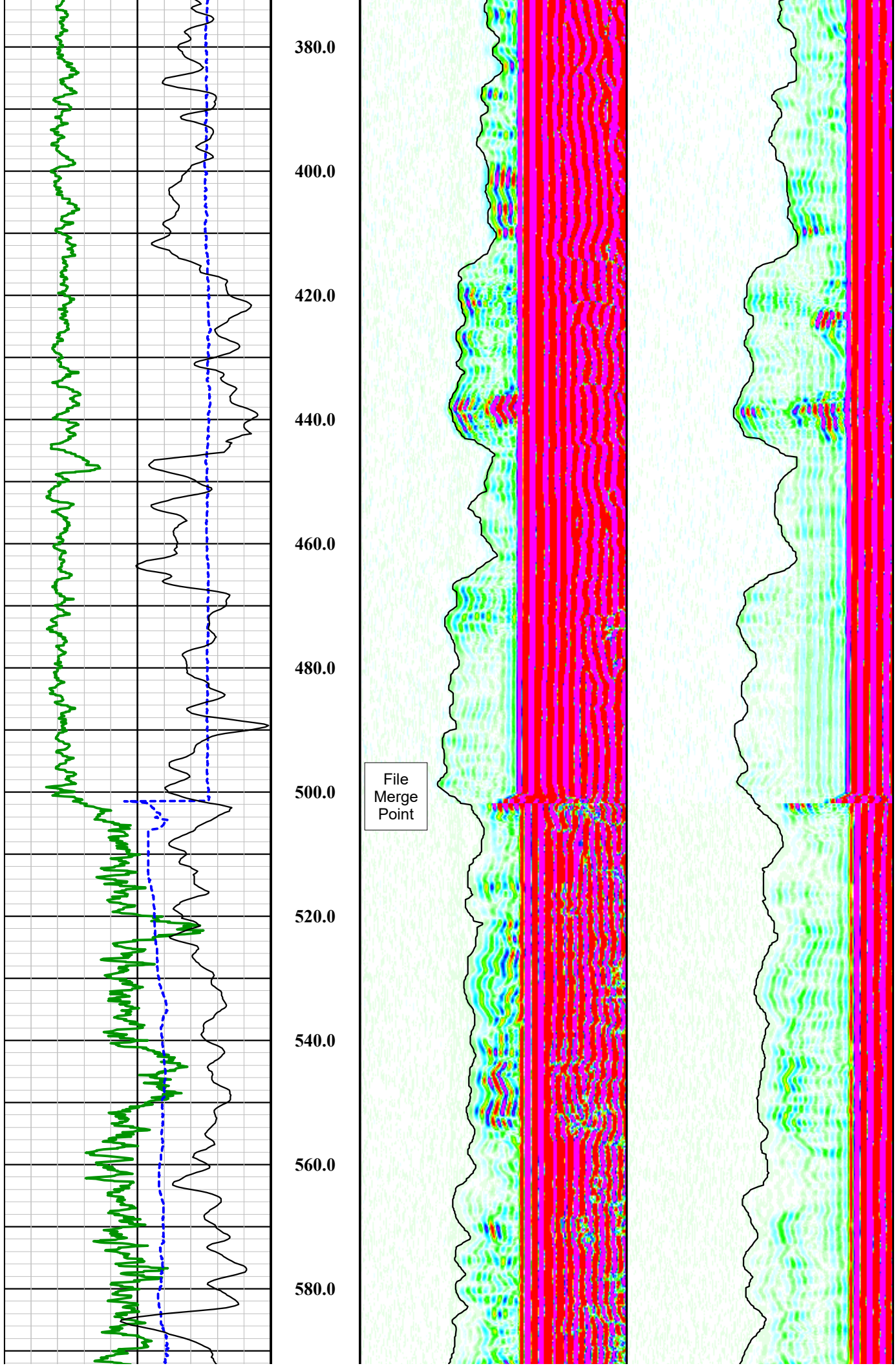
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Merge
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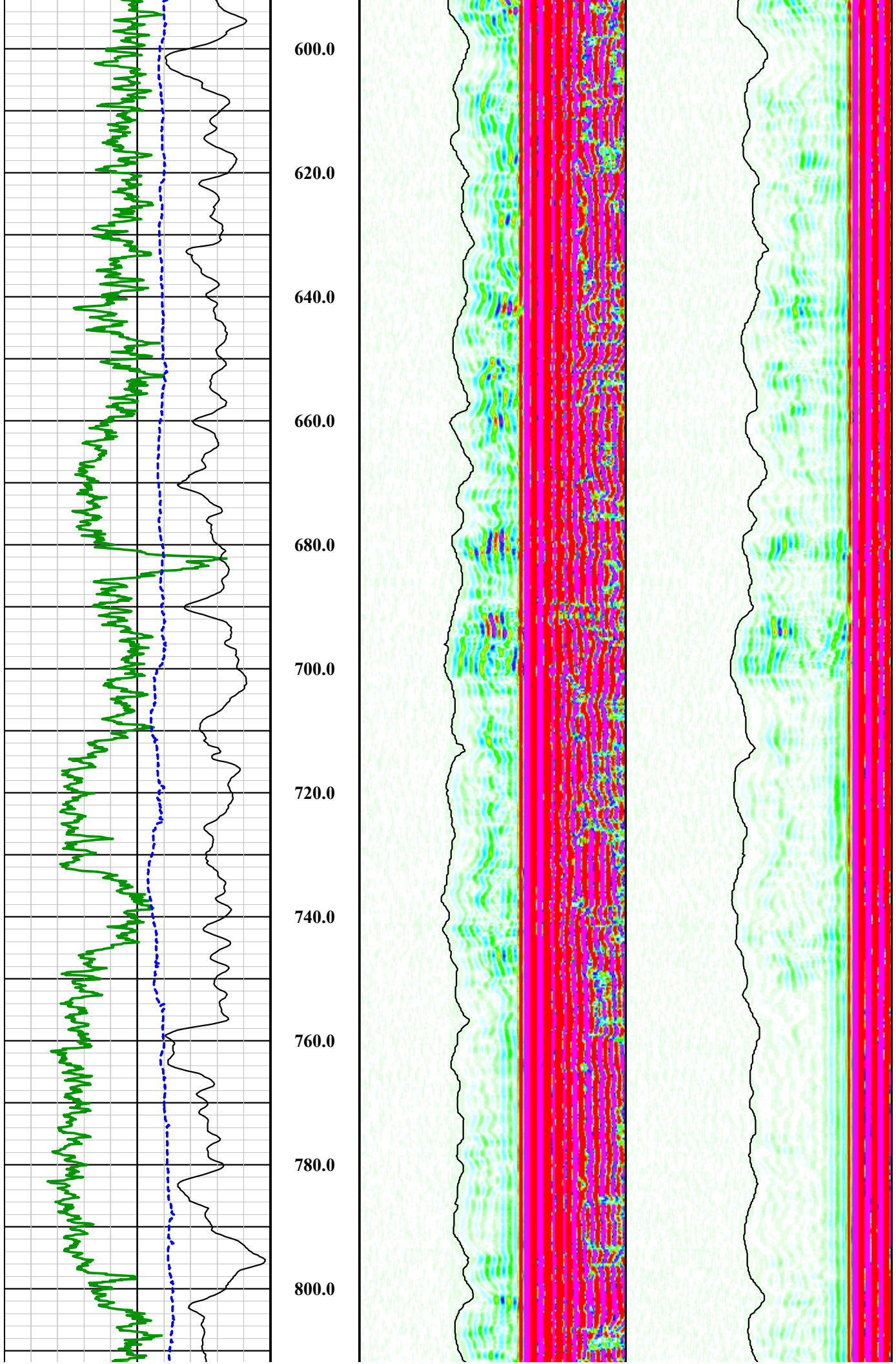
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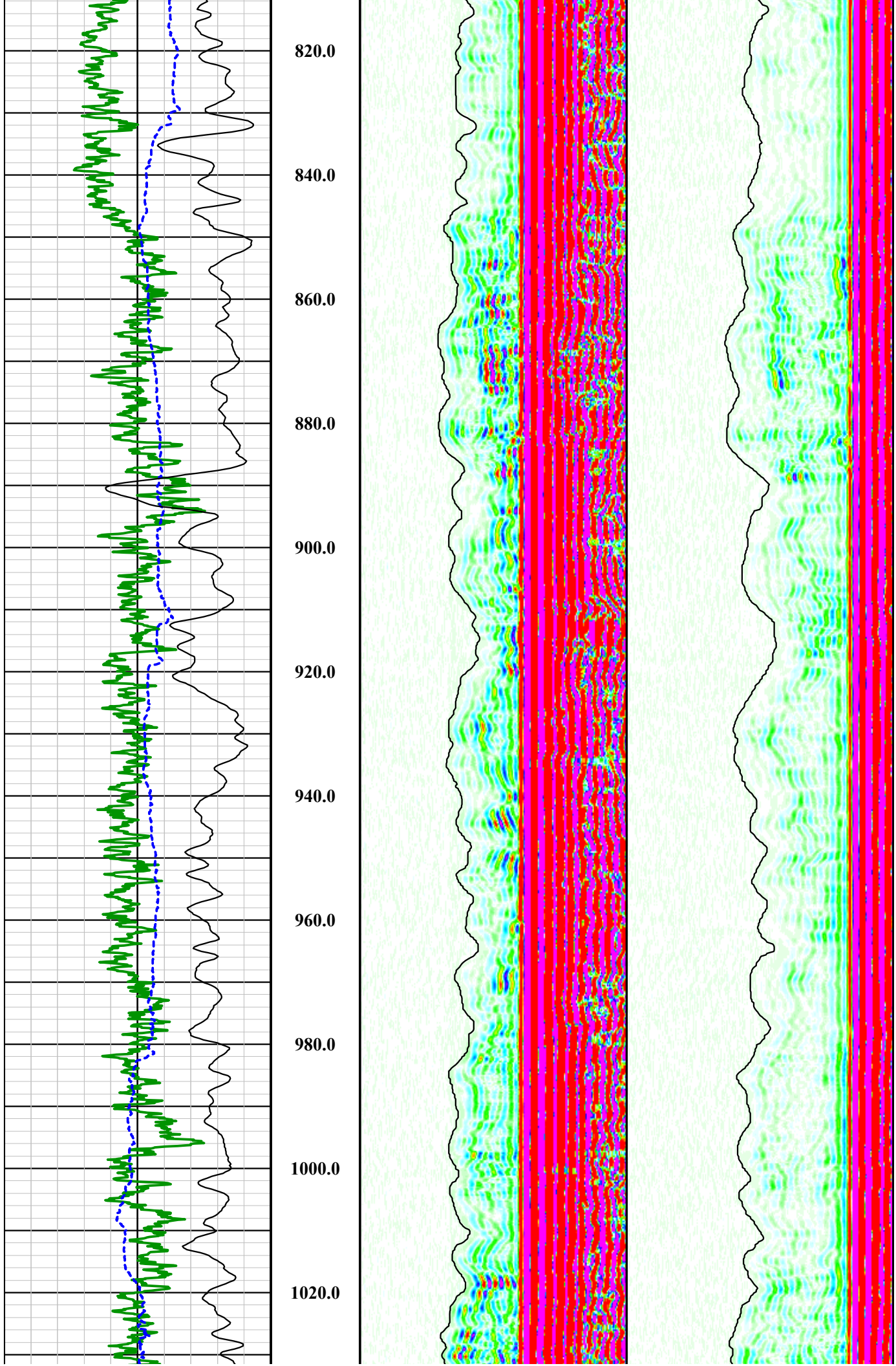
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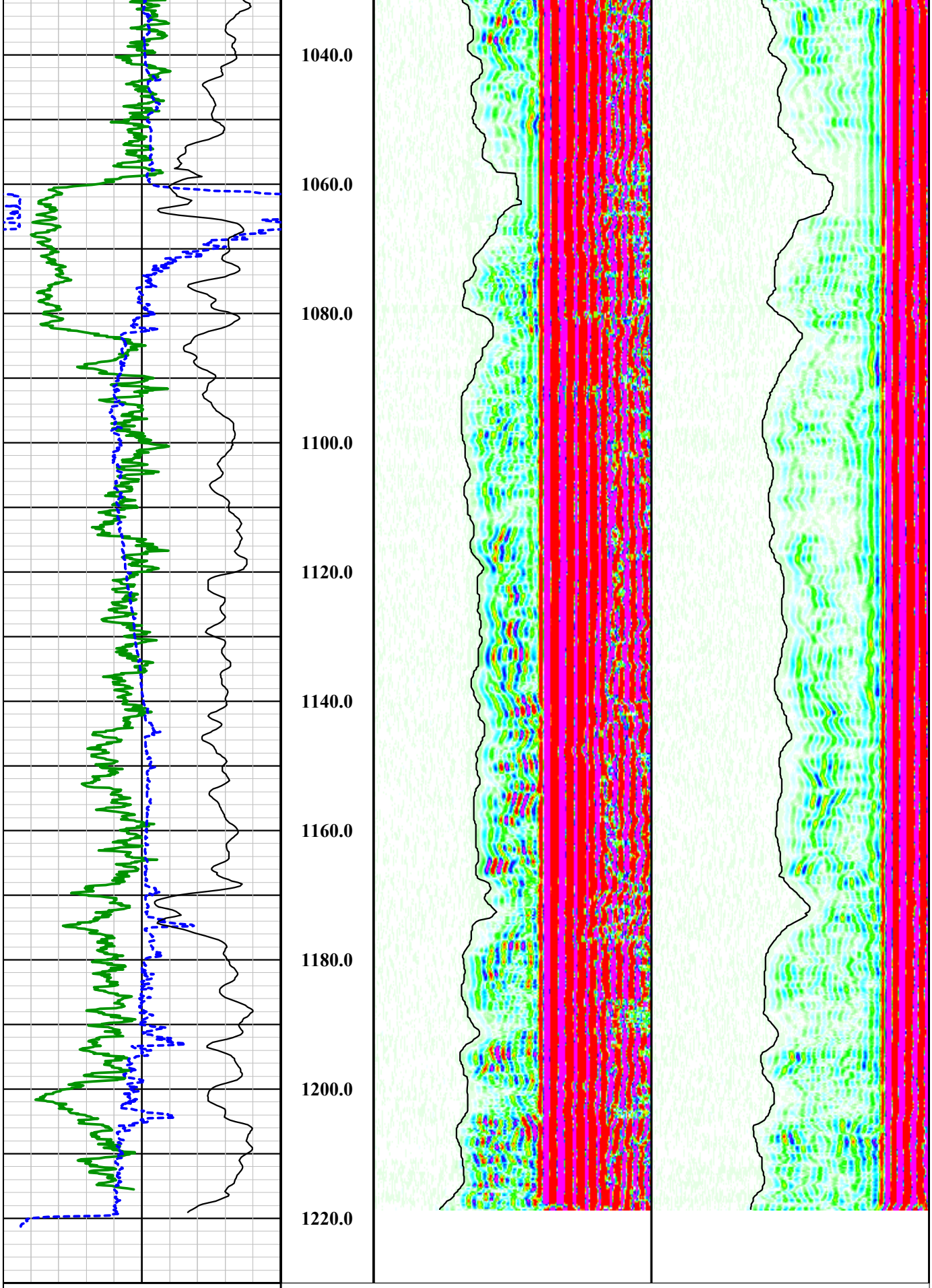


240 uSec/ft 40		100 uSec 1000	100 uSec 1000
Delta T			
5 Inches 25		100 uSec 1000	100 uSec 1000
3-Arm Caliper		**RX1 - Travel Time**	**RX2 - Travel Time**
0 API 400		100 uSec 1000	100 uSec 1000

Nat. Gamma	Depth	RX1 - VDL	RX2 - VDL
0 API 400	1in:20ft	100 uSec 1000	100 uSec 1000

MSI 60 mm 2 RX Full Waveform Sonic Tool

Probe Top = Depth Ref.

Tool SN: 5001, 5050 & 6003

Four Conductor MSI Probe Top

Probe Length = 2.8 m or 9.19 ft
Probe Weight = ~26.5 kg or 58.4 lbs

Sensors: Ceramic Piezoelectric

Transmitter Frequency: 24 - 28 kHz resonant frequency

Rx - Rx Spacing: 0.3 m (12.0 in)

Typically centralized with external centralizers

Can only be collected in fluid

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

Rx-2 **Tx - Rx2 Spacing = 1.22 m (48.0 in)**

Rx-1 **Tx - Rx1 Spacing = .91 m (36.0 in)**

Acoustic Isolater

Tx = Acoustic Transmitter

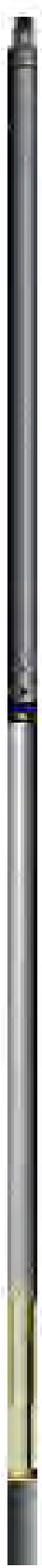
0.660 m or 26.0 in. - End of tool to center of Tx

2.36 in or 60 mm Diameter

QL40 Gamma-Caliper-Temperature-Fluid Conductivity

Probe Top = Depth Ref.

Tool SN: 5613, 5979, 6161 & 6292



Four Conductor MSI Probe Top

Probe Length = 3.69 m or 12.12 ft
Probe Weight = 18.195 kg or 40.11 lbs

Caliper arms can only collect data logging up hole

Fluid Temperature/Conductivity and Natural Gamma can be collected logging up and down hole

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

Natural Gamma Ray = 1.07 m (42.12 in)

3-Arm Caliper = 1.78 m (70.27 in)

Available Arm Sizes: 3", 9", and 15"

FTC (Fluid Temperature/Conductivity) = 0.78 m (30.71 in)

1.57" or 40.0 mm Diameter

Southwest Exploration Services, LLC
borehole geophysics & video services

Company	FLORENCE COPPER
Well	I-04
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final Sonic Summary

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY	FLORENCE COPPER
WELL ID	I-04
FIELD	FLORENCE COPPER
COUNTY	PINAL STATE ARIZONA

TYPE OF LOGS: 3-ARM CALIPER
MORE: W / VOLUME CALC.

LOCATION

SEC TWP RGE

OTHER SERVICES
E-LOG
SONIC
DEVIATION
GAMMA - NEUTRON
NAT. GAMMA
TEMPERATURE
FLUID RESISTIVITY

PERMANENT DATUM	ELEVATION	K.B.
LOG MEAS. FROM	GROUND LEVEL ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM	GROUND LEVEL	G.L.

DATE	11-14-17	TYPE FLUID IN HOLE	MUD
RUN No	1	MUD WEIGHT	N/A
TYPE LOG	VOLUME CALCULATION	VISCOSITY	N/A
DEPTH-DRILLER	507 FT.	LEVEL	FULL
DEPTH-LOGGER	502 FT.	MAX. REC. TEMP.	26.02 DEG. C
BTM LOGGED INTERVAL	502 FT.	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.2 FT.
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #900
RECORDED BY / Logging Eng.	A. OLSON / M. QUINONES	TOOL STRING/SN	MSI COMBO TOOL SN 4183
WITNESSED BY	COLLIN - H&A	LOG TIME:ON SITE/OFF SITE	7:15 A.M.

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT.	24 IN.	STEEL	SURFACE	40 FT.
2	20 IN.	40 FT.	TOTAL DEPTH				
3							

COMMENTS:

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Tool Summary:

Date	11-14-17	**Date**	11-14-17	**Date**	11-14-17	**Date**	
Run No.	1	**Run No.**	2	**Run No.**	3	**Run No.**	4
Tool Model	MSI COMBO TOOL	**Tool Model**	GEOVISTA E-LOG	**Tool Model**	MSI 60MM SONIC	**Tool Model**	MSI DEVIATION
Tool SN	4186	**Tool SN**	4790	**Tool SN**	5001	**Tool SN**	6002
From	SURFACE	**From**	SURFACE	**From**	SURFACE	**From**	SURFACE
To	502 FT.	**To**	502 FT.	**To**	502 FT.	**To**	502 FT.
Recorded By	A. OLSON	**Recorded By**	A. OLSON	**Recorded By**	A. OLSON	**Recorded By**	A. OLSON
Truck No	900	**Truck No**	900	**Truck No**	900	**Truck No**	900
Operation Check	11-13-17	**Operation Check**	11-13-17	**Operation Check**	11-13-17	**Operation Check**	11-13-17
Calibration Check	11-13-17	**Calibration Check**	11-13-17	**Calibration Check**	N/A	**Calibration Check**	N/A
Time Logged	7:10 A.M.	**Time Logged**	7:45 A.M.	**Time Logged**	8:20 A.M.	**Time Logged**	9:00 A.M.

Date	11-14-17	**Date**	
Run No.	5	**Run No.**	6
Tool Model	COMPROBE G-N	**Tool Model**	
Tool SN	1107	**Tool SN**	
From	SURFACE	**From**	
To	502 FT.	**To**	
Recorded By	A. OLSON	**Recorded By**	
Truck No	900	**Truck No**	
Operation Check	11-13-17	**Operation Check**	
Calibration Check	N/A	**Calibration Check**	
Time Logged	9:45 A.M.	**Time Logged**	

Additional Comments:

Caliper Arms Used: 15 IN. **Calibration Points:** 8 IN. & 23 IN.

E-Log Calibration Range: 10-1000 OHM-M **Calibration Points:** 10 & 1000 OHM-M

Disclaimer:

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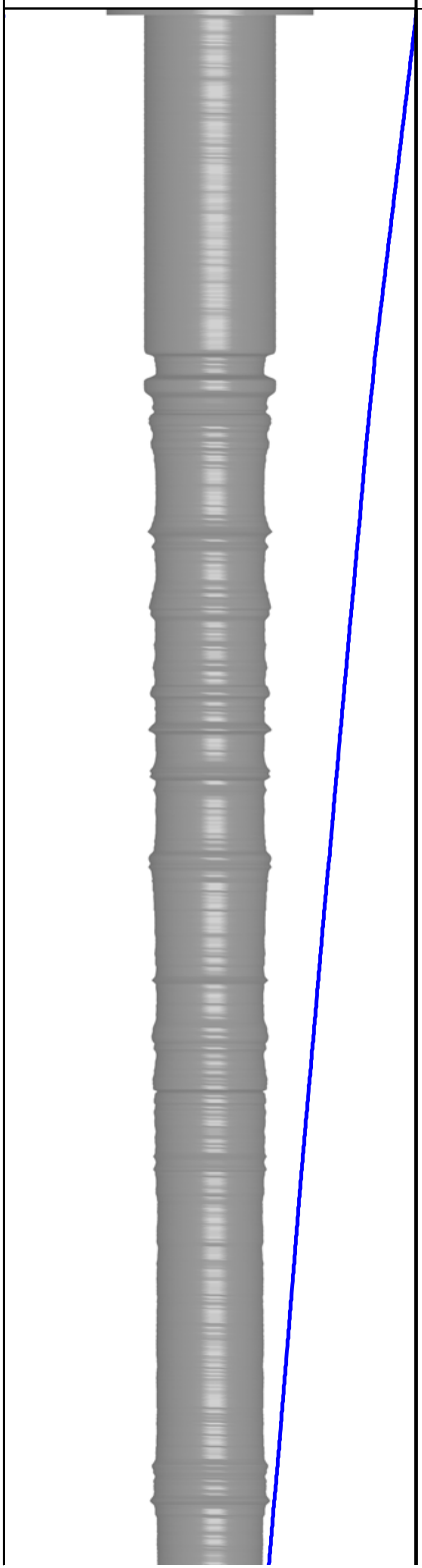
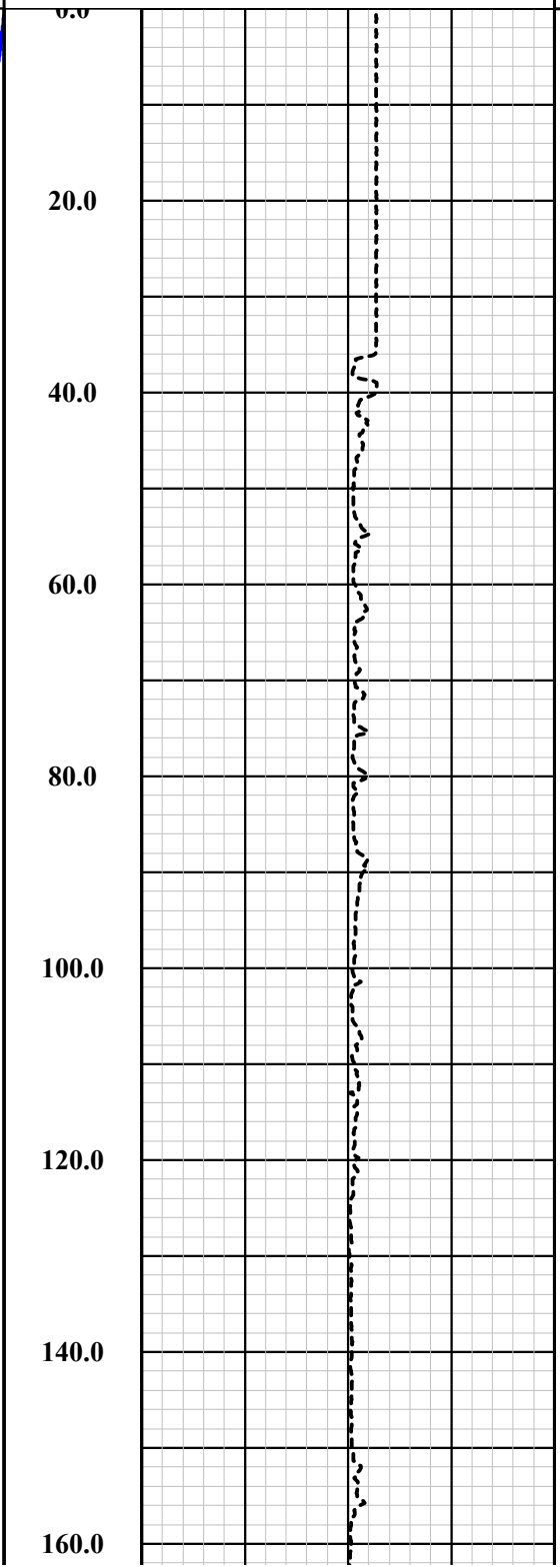
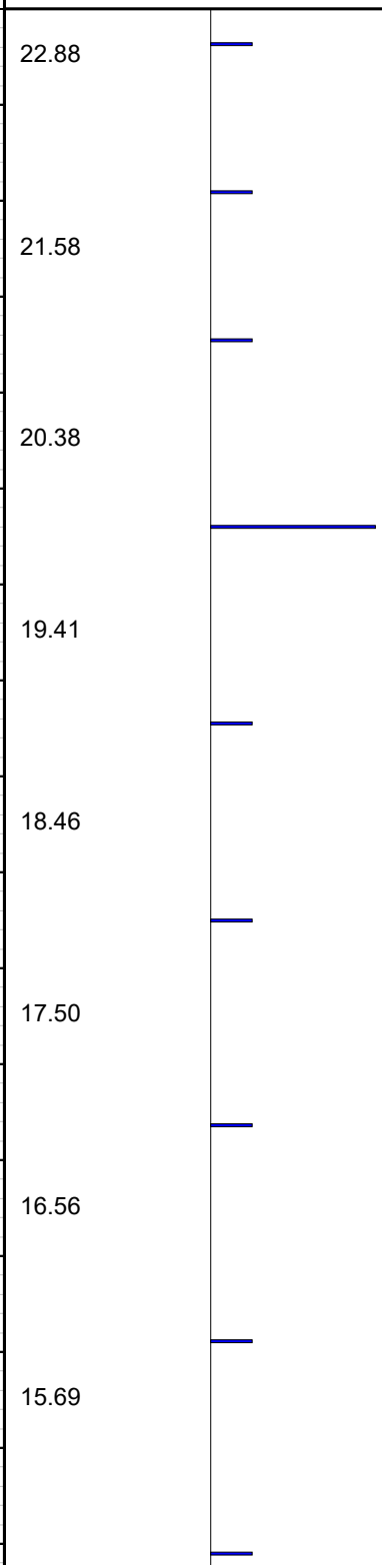
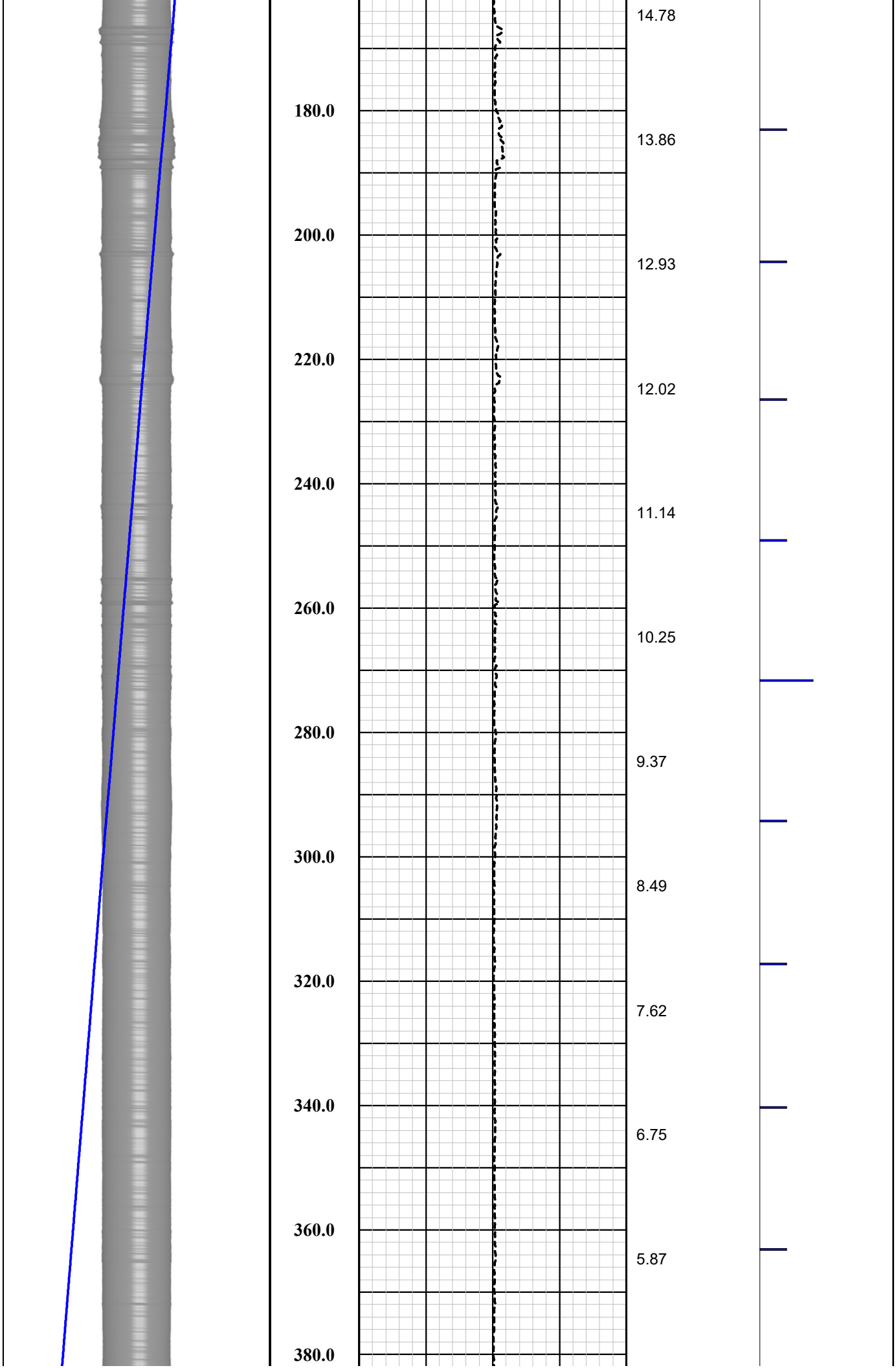
Total Volume	Depth	3-Arm Caliper	Cumulated Volume (cu.yd)
0 cu.yd 23.14	1in:20ft	0 Inches 40	
3-D View			Based on 14" OD Casing
-0°			





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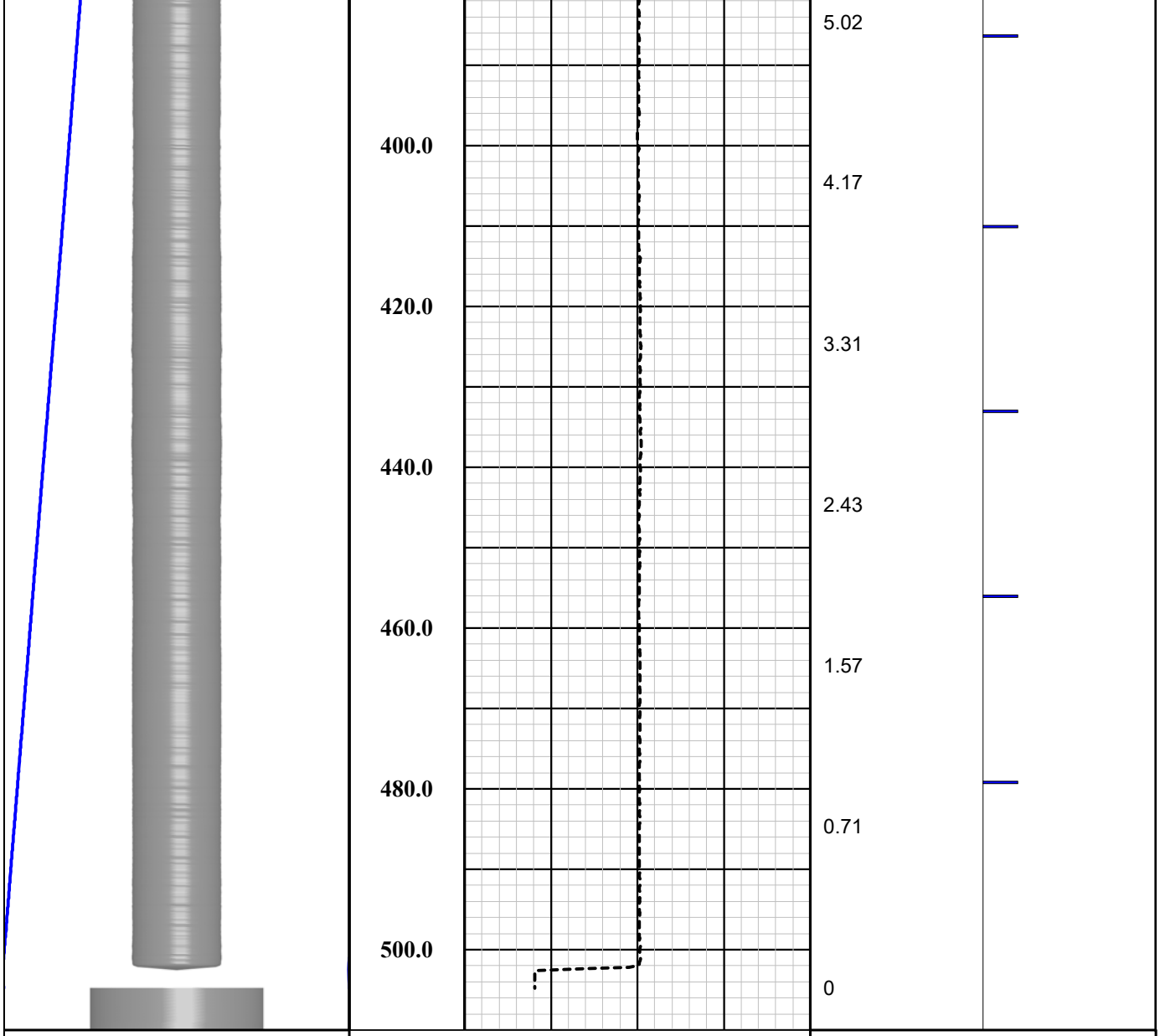
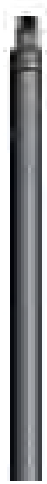
5.87



MSI Gamma-Caliper-Temperature-Fluid Resistivity

Probe Top = Depth Ref.



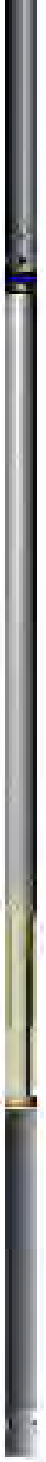
Single Conductor MSI Probe Top

Probe Length = 2.59 m or 8.5 ft
Probe Weight = 6.80 kg or 15.0 lbs

Natural Gamma and Caliper can only be collected logging up hole.

Fluid Temperature/Resistivity can only be collected logging down hole.

Temperature Rating: 70 Deg C (158 Deg F)
Presure Rating: 200 bar (2900 psi)



Natural Gamma Ray = 0.76 m (29.75 in)

NOTE: Lengths on a particular tool may vary from those listed on this document due to probe sizes and styles utilized

3-Arm Caliper = 1.44 m (56.75 in)

Distance from tool top: 2.20 m (86.5 in)

Available Arm Sizes: 3", 9", and 15"

TFR (Temperature/Fluid Resistivity) = 0.39 m (15.5 in)

1.375" or 34.9 mm Diameter

Southwest Exploration Services, LLC
borehole geophysics & video services

Company	FLORENCE COPPER
Well	I-04
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final Caliper w / Volume Calculation Summary

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY FLORENCE COPPER
WELL ID I-04
FIELD FLORENCE COPPER
COUNTY PINAL STATE ARIZONA

TYPE OF LOGS: 3-ARM CALIPER
MORE: W/ VOLUME CALC

LOCATION

SEC TWP RGE

OTHER SERVICES
SONIC
E-LOG
DEVIATION
GAMMA-NEUTRON

PERMANENT DATUM		ELEVATION	K.B.
LOG MEAS. FROM	GROUND LEVEL	ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM	GROUND LEVEL		G.L.

DATE	03-27-18	TYPE FLUID IN HOLE	MUD
RUN No	1	MUD WEIGHT	N/A
TYPE LOG	VOLUME CALCULATION	VISCOSITY	N/A
DEPTH-DRILLER	1225.0 FT	LEVEL	~ 53.5 FT
DEPTH-LOGGER	1224.7 FT	MAX. REC. TEMP.	27.0 DEG C
BTM LOGGED INTERVAL	1224.7 FT	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.1 FT
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #500
RECORDED BY / Logging Eng.	E. BEAM / E. TURNER	TOOL STRING/SN	QL COMBO TOOL SN 6292
WITNESSED BY	CHAD - H&A	LOG TIME:ON SITE/OFF SITE	6:20 AM

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT	24 IN	STEEL	SURFACE	40 FT
2	20 IN	40 FT	500 FT	14 IN	STEEL	SURFACE	500 FT
3	12 3/4 IN	500 FT	TOTAL DEPTH				

COMMENTS:

.

Tool Summary:

Date	03-27-18	**Date**	03-27-18	**Date**	03-27-18		
Run No.	1	**Run No.**	2	**Run No.**	3		
Tool Model	QL COMBO TOOL	**Tool Model**	GEOVISTA E-LOG	**Tool Model**	MSI 60MM SONIC		
Tool SN	6292	**Tool SN**	4035	**Tool SN**	5050		
From	SURFACE	**From**	475.0 FT	**From**	410.0 FT		
To	1224.7 FT	**To**	1224.7 FT	**To**	1224.7 FT		
Recorded By	E. BEAM	**Recorded By**	E. BEAM	**Recorded By**	E. BEAM		
Truck No	500	**Truck No**	500	**Truck No**	500		
Operation Check	03-27-18	**Operation Check**	03-27-18	**Operation Check**	03-27-18		
Calibration Check	03-27-18	**Calibration Check**	N/A	**Calibration Check**	N/A		
Time Logged	8:00 AM	**Time Logged**	9:10 AM	**Time Logged**	9:45 AM		
Date	03-27-18	**Date**	03-27-18	**Date**			
Run No.	4	**Run No.**	5	**Run No.**	6		
Tool Model	COMPROBE GN	**Tool Model**	QL DEVIATION	**Tool Model**			
Tool SN	1107	**Tool SN**	142201	**Tool SN**			
From	400.0 FT	**From**	480.0 FT	**From**			
To	1224.7 FT	**To**	1224.7 FT	**To**			
Recorded By	E. BEAM	**Recorded By**	E. BEAM	**Recorded By**			
Truck No	500	**Truck No**	500	**Truck No**			
Operation Check	03-27-18	**Operation Check**	03-27-18	**Operation Check**			
Calibration Check	N/A	**Calibration Check**	N/A	**Calibration Check**			
Time Logged	10:45 AM	**Time Logged**	11:30 AM	**Time Logged**			

Additional Comments:

Caliper Arms Used: 15" **Calibration Points:** 14" & 12"

E-Log Calibration Range: 1 - 1,000 OHM-M **Calibration Points:** 1 & 1,000 OHM-M

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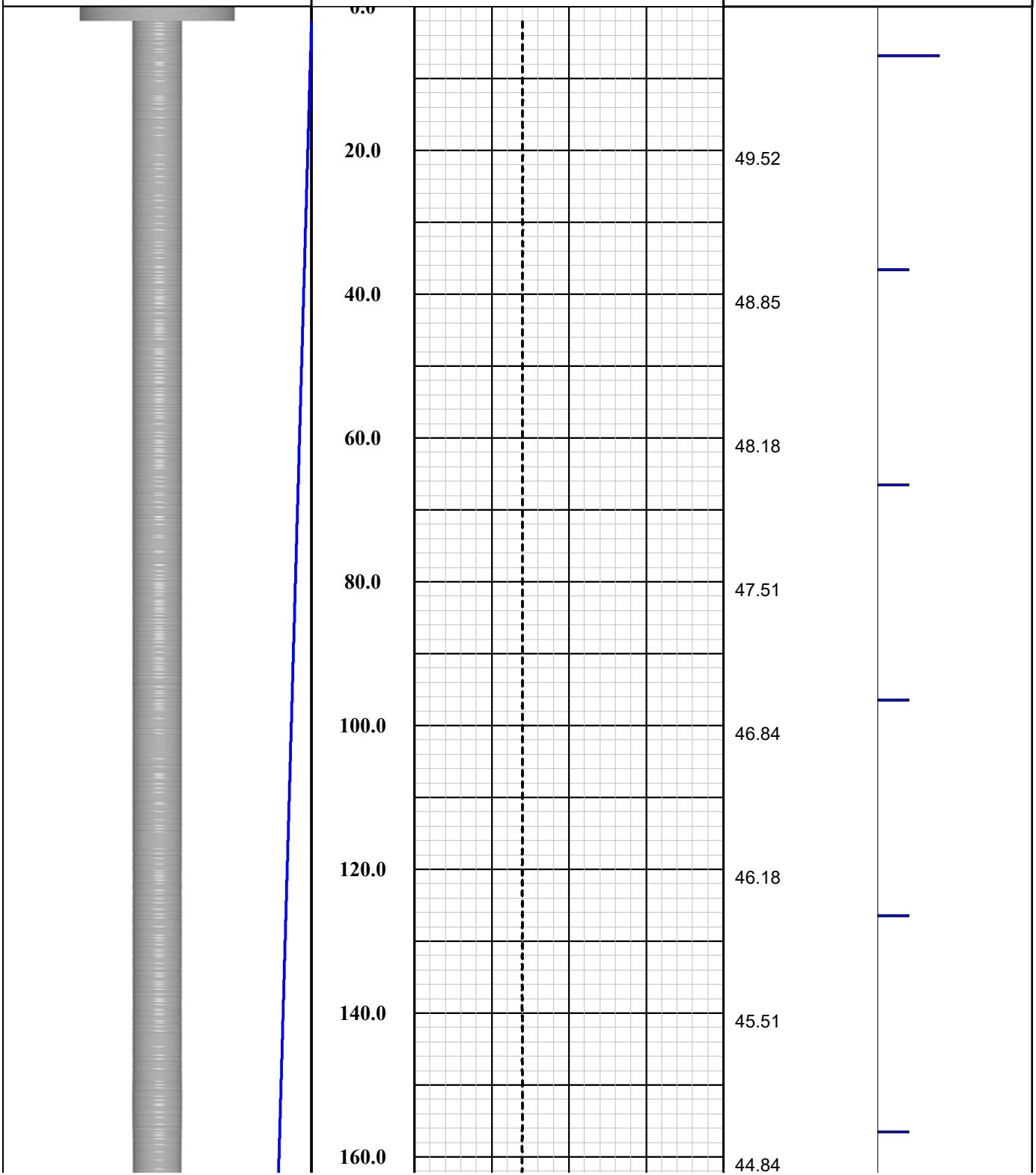
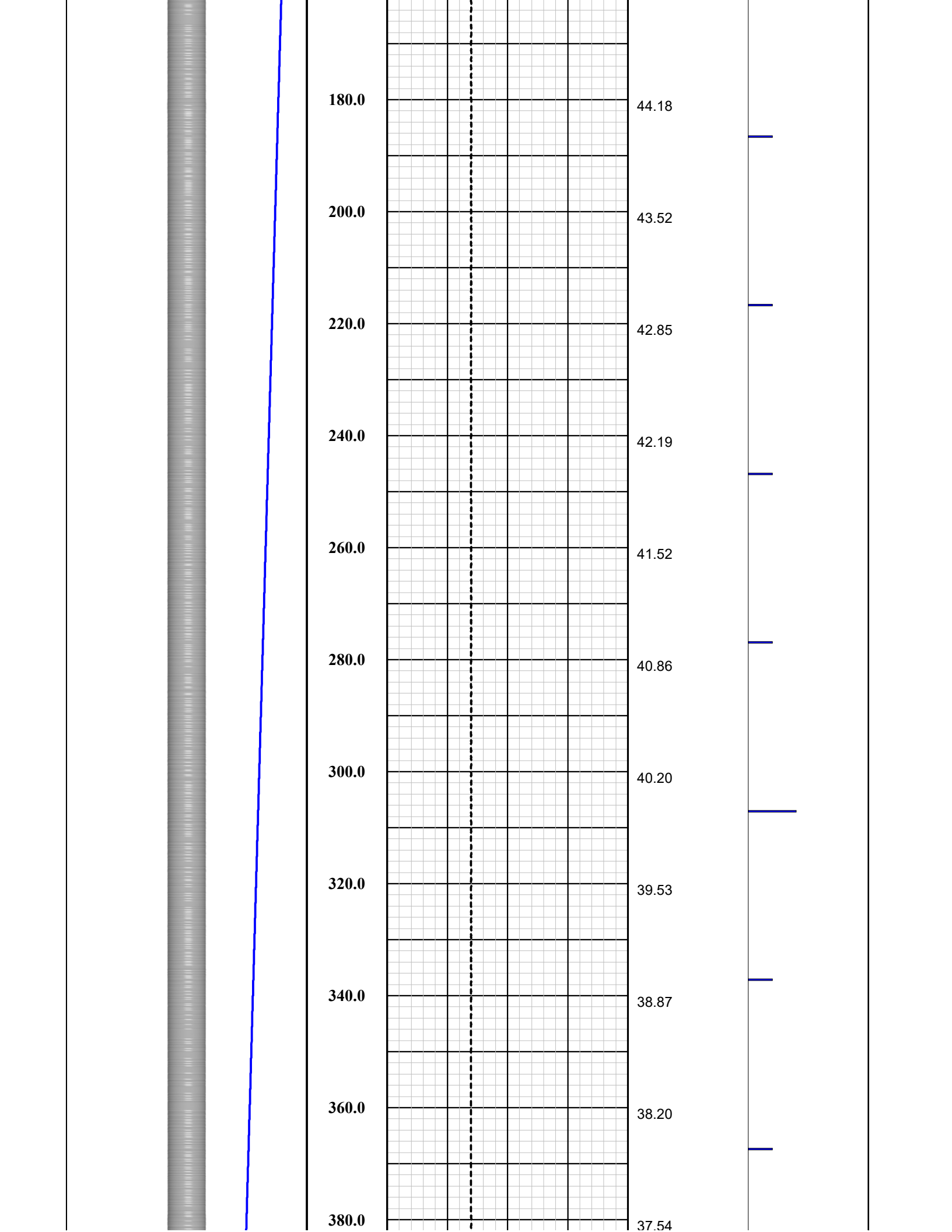
Total Volume	Depth	3-Arm Caliper	Cumulated Volume (cu.yd)
0 cu.yd 50.16	1in:20ft	0 Inches 40	
3-D View			Based on 5.5" OD Casing
-0°			

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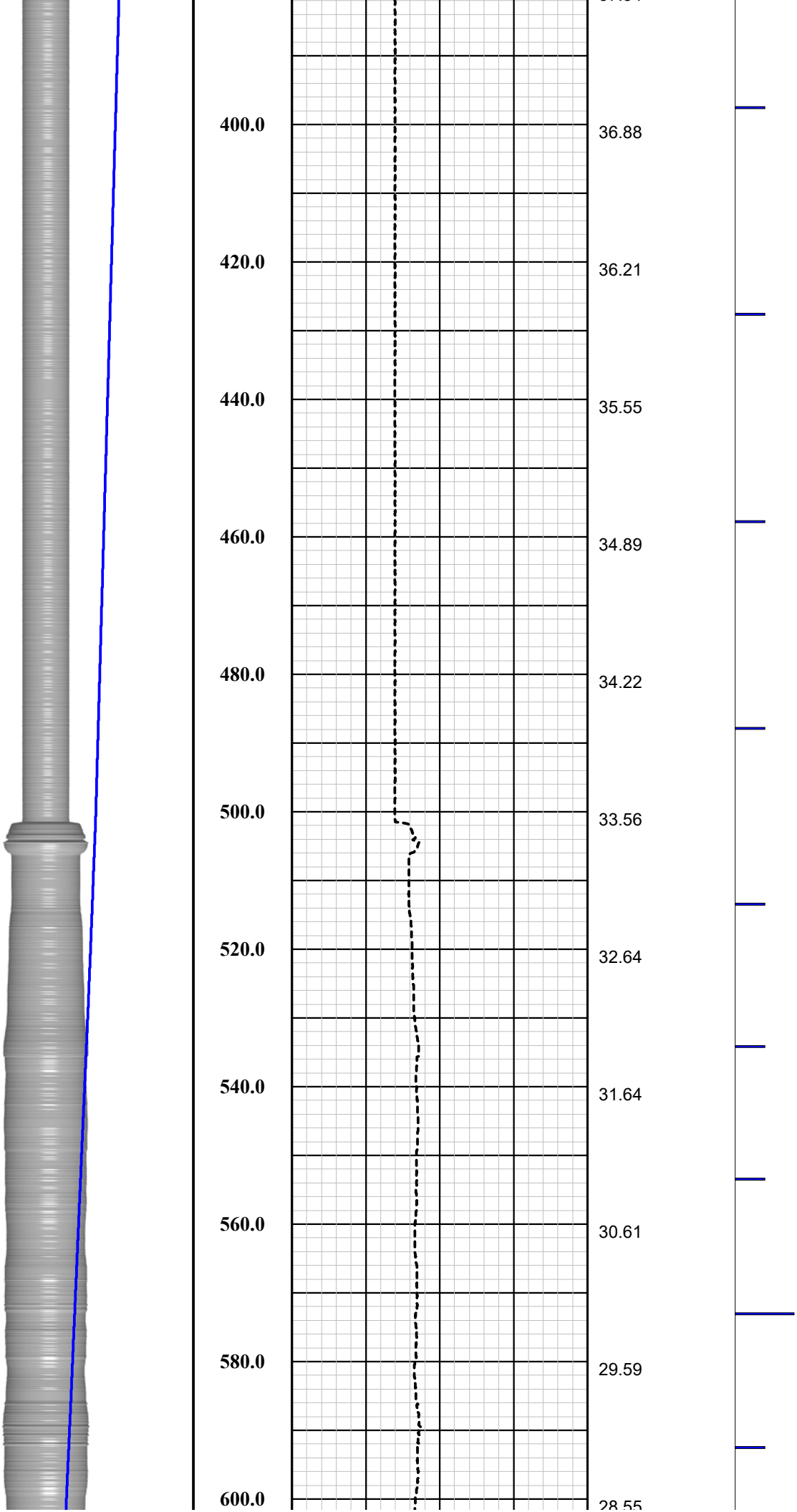
38.20
380.0
37.54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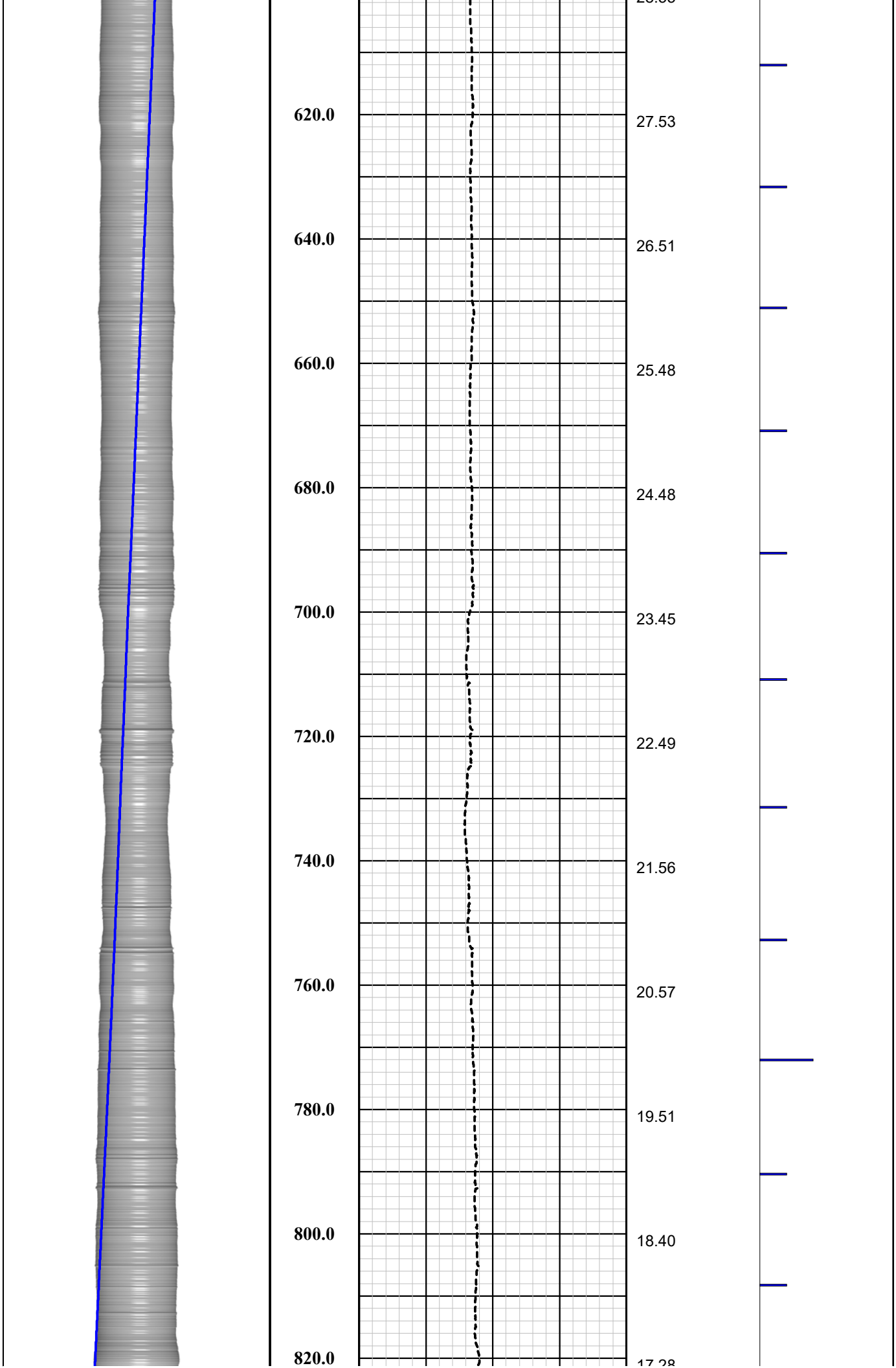
36.88
420.0
36.21
440.0
35.55
460.0
34.89
480.0
34.22
500.0
33.56
520.0
32.64
540.0
31.64
560.0
30.61
580.0
29.59
600.0
28.55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640.0
660.0
680.0
700.0
720.0
740.0
760.0
780.0
800.0
820.0
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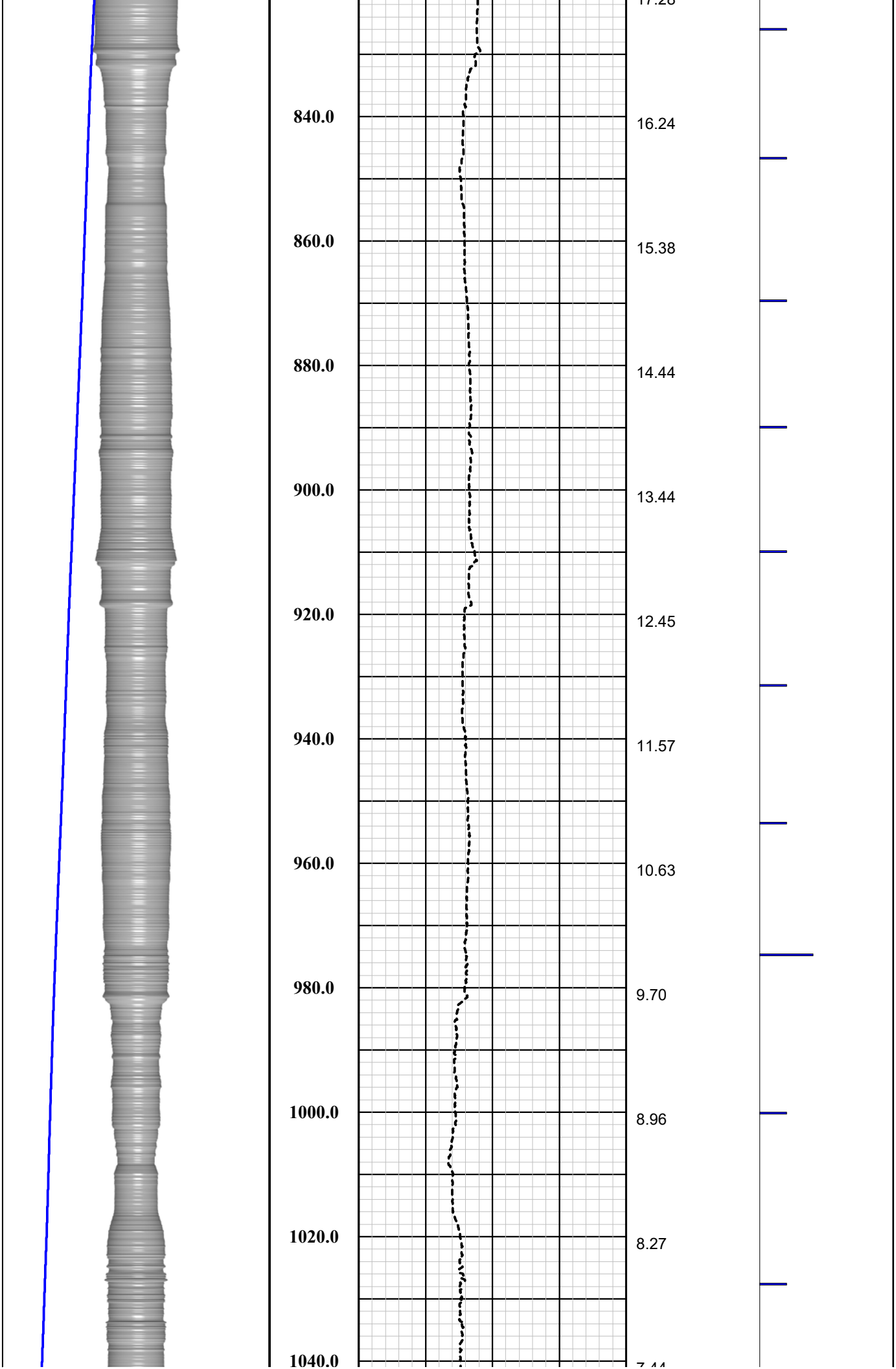
26.51
25.48
24.48
23.45
22.49
21.56
20.57
19.51
18.40
17.28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960.0
980.0
1000.0
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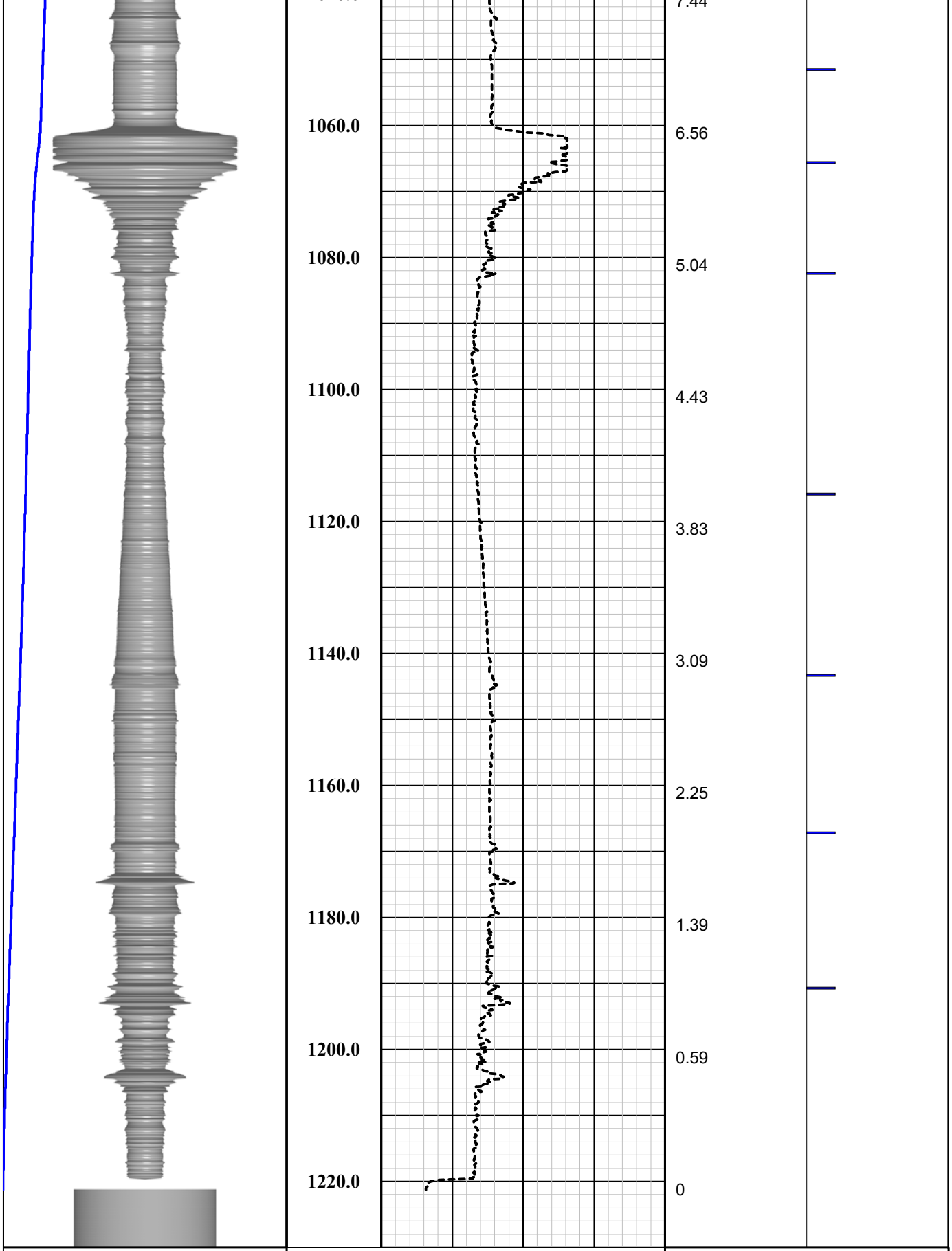
15.38
14.44
13.44
12.45
11.57
10.63
9.70
8.96
8.27



-0°

3-D View

Based on 5.5" OD Casing

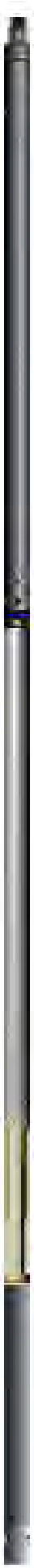
0 cu.yd 50.16	1in:20ft	0 Inches 40	
Total Volume	**Depth**	**3-Arm Caliper**	**Cumulated Volume (cu.yd)**

QL40 Gamma-Caliper-Temperature-Fluid Conductivity

Q240 Gamma Caliper Temperature Fluid Conductivity

Probe Top = Depth Ref.

Tool SN: 5613, 5979, 6161 & 6292



Four Conductor MSI Probe Top

Probe Length = 3.69 m or 12.12 ft
Probe Weight = 18.195 kg or 40.11 lbs

Caliper arms can only collect data logging up hole

Fluid Temperature/Conductivity and Natural Gamma can be collected logging up and down hole

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

Natural Gamma Ray = 1.07 m (42.12 in)

3-Arm Caliper = 1.78 m (70.27 in)

Available Arm Sizes: 3", 9", and 15"

FTC (Fluid Temperature/Conductivity) = 0.78 m (30.71 in)

1.57" or 40.0 mm Diameter

Southwest Exploration Services, LLC
borehole geophysics & video services

Company	FLORENCE COPPER
Well	I-04
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final Caliper w/ Volume Calculation Summary

Drift Report

Wellbore DRIFT Interpretation

PREPARED ESPECIALLY FOR

FLORENCE COPPER

I-04

Tuesday - November 14, 2017

Southwest Exploration Services, LLC
borehole geophysics and video services

Southwest Exploration Services, LLC
(480) 926-4558

WELLBORE DRIFT INTERPRETATION

Southwest Exploration Services, LLC

(480) 926-4558

Company: FLORENCE COPPER **Well Owner:**

County: PINAL **State:** Arizona **Country:** United States

Well Number: I-04 **Survey Date:** Tuesday - November 14, 2017 **Magnetic Declination:** Declination Correction Not Used

Field: FLORENCE COPPER **Drift Calculation Methodology:** Balanced Tangential Method

Location:

Remarks:

Witness: COLLIN - H&A **Vehicle No.:** 900 **Invoice No.:** **Operator:** A. OLSON **Well Depth:** 500 Feet **Casing size:** 20 Inches

Tool: Compass - 6002 **Lat.:** **Long.:** **Sec.:** **Twp.:** **Rge.:**

MEASURED DATA			DATA COMPUTATIONS						
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	TVD, feet	T. LATITUDE, feet	T. LONGITUDE, feet	DOGLEG SEV., degrees per 20 Feet	DOGLEG SEV., degrees per 100 feet	DRIFT DIST., feet	DRIFT BGR., degrees
0	0.17	135.05	0.00						
20	0.16	127.75	19.99	-0.038	0.043	1.00	0.15	0.06' (.72")	131.50
40	0.18	356.89	39.98	-0.024	0.063	0.41	2.08	0.07' (.84")	110.50
60	0.68	109.53	59.97	-0.032	0.173	0.96	1.91	0.18' (2.16")	100.60
80	0.21	187.71	79.96	-0.108	0.280	0.84	1.44	0.30' (3.60")	111.10
100	0.36	180.66	99.96	-0.207	0.274	0.42	0.14	0.34' (4.08")	127.10
120	0.11	164.13	119.95	-0.288	0.279	0.13	0.33	0.40' (4.80")	136.00
140	0.14	187.34	139.94	-0.331	0.281	0.43	0.46	0.43' (5.16")	139.60
160	0.11	133.69	159.93	-0.368	0.292	0.83	1.03	0.47' (5.64")	141.60
180	0.12	091.57	179.92	-0.382	0.327	0.95	0.82	0.50' (6.00")	139.40
200	0.11	335.48	199.91	-0.365	0.340	0.37	1.94	0.50' (6.00")	137.00
220	0.19	264.53	219.90	-0.351	0.299	1.00	1.33	0.46' (5.52")	139.50
240	0.15	296.28	239.89	-0.343	0.243	1.00	0.63	0.42' (5.04")	144.70
260	0.17	279.35	259.88	-0.327	0.190	0.34	0.34	0.38' (4.56")	149.80
280	0.08	324.30	279.87	-0.311	0.153	0.93	0.88	0.35' (4.20")	153.90
300	0.22	278.36	299.86	-0.294	0.107	0.78	0.89	0.31' (3.72")	160.00
320	0.21	246.67	319.85	-0.303	0.035	0.53	0.63	0.30' (3.60")	173.30
340	0.14	276.85	339.84	-0.315	-0.023	0.00	0.60	0.32' (3.84")	184.20

True Vertical Depth: 499.76' **Final Drift Distance:** .27' (3.24") **Final Drift Bearing:** 220.80°

Note: Magnetic Declination is not used because it is not a factor in the calculation of well drift or alignment. Magnetic Declination is only important if attempting to hit a target or miss another well and then it is included in the calculations.

WELLBORE DRIFT INTERPRETATION

Southwest Exploration Services, LLC

I-04

(480) 926-4558

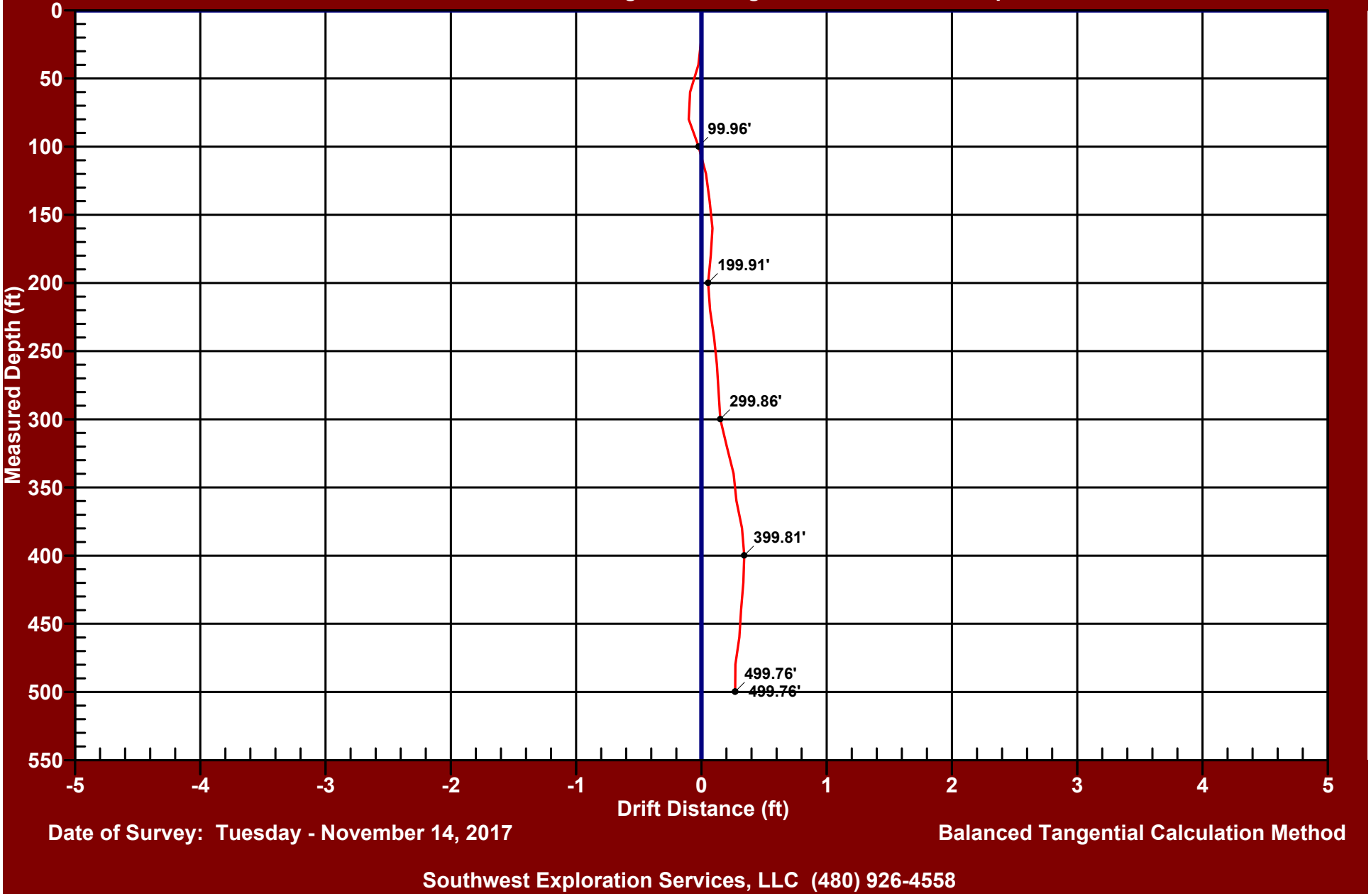
MEASURED DATA			DATA COMPUTATIONS						
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	TVD, feet	T. LATITUDE, feet	T. LONGITUDE, feet	DOGLEG SEV., degrees per 20 Feet	DOGLEG SEV., degrees per 100 feet	DRIFT DIST., feet	DRIFT BRG., degrees
360	0.21°	290.31°	359.83	-0.299	-0.082	0.56	0.27	0.31' (3.72")	195.30
380	0.16°	216.03°	379.82	-0.309	-0.133	0.73	1.38	0.34' (4.08")	203.30
400	0.06°	076.74°	399.81	-0.329	-0.139	0.88	2.15	0.36' (4.32")	202.90
420	0.09°	128.25°	419.80	-0.336	-0.116	0.20	1.00	0.36' (4.32")	199.10
440	0.14°	334.57°	439.79	-0.324	-0.114	0.97	2.23	0.34' (4.08")	199.40
460	0.05°	028.22°	459.78	-0.294	-0.120	0.96	1.03	0.32' (3.84")	202.20
480	0.21°	347.25°	479.77	-0.251	-0.124	0.12	0.80	0.28' (3.36")	206.30
500	0.25°	289.59°	499.76	-0.201	-0.173	0.81	1.10	0.27' (3.24")	220.80

True Vertical Depth: 499.76' **Final Drift Distance: .27' (3.24")** **Final Drift Bearing: 220.80°**

PLANE OF DRIFT VIEW - I-04

FLORENCE COPPER

Drift Distance = 0.27 Feet Drift Bearing = 220.8 Degrees True Vertical Depth = 499.76 Feet



Date of Survey: Tuesday - November 14, 2017

Balanced Tangential Calculation Method

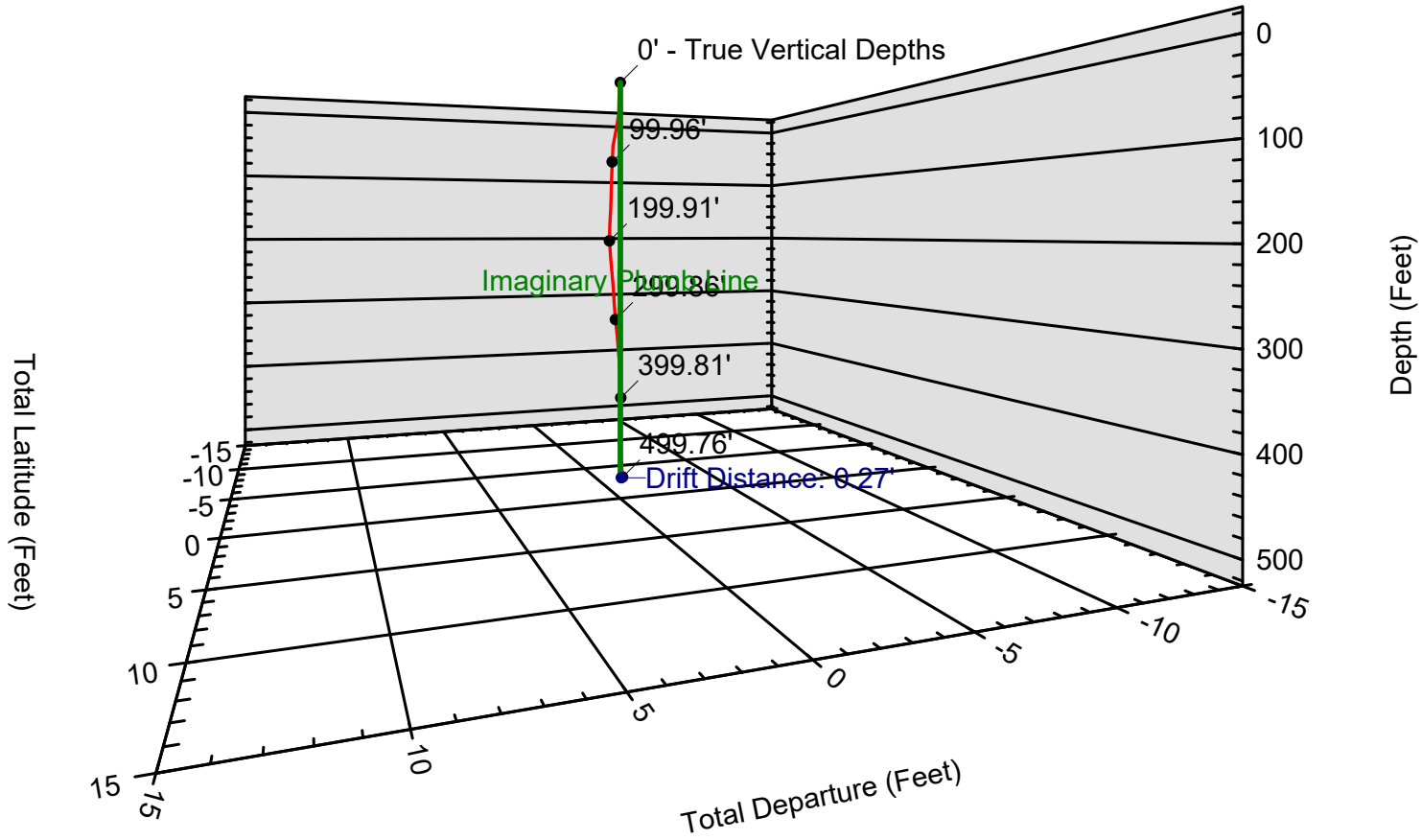
Southwest Exploration Services, LLC (480) 926-4558

3D PROJECTION VIEW - I-04

FLORENCE COPPER

Drift Distance = 0.27 Feet Drift Bearing = 220.8 Degrees True Vertical Depth = 499.76 Feet

341.0



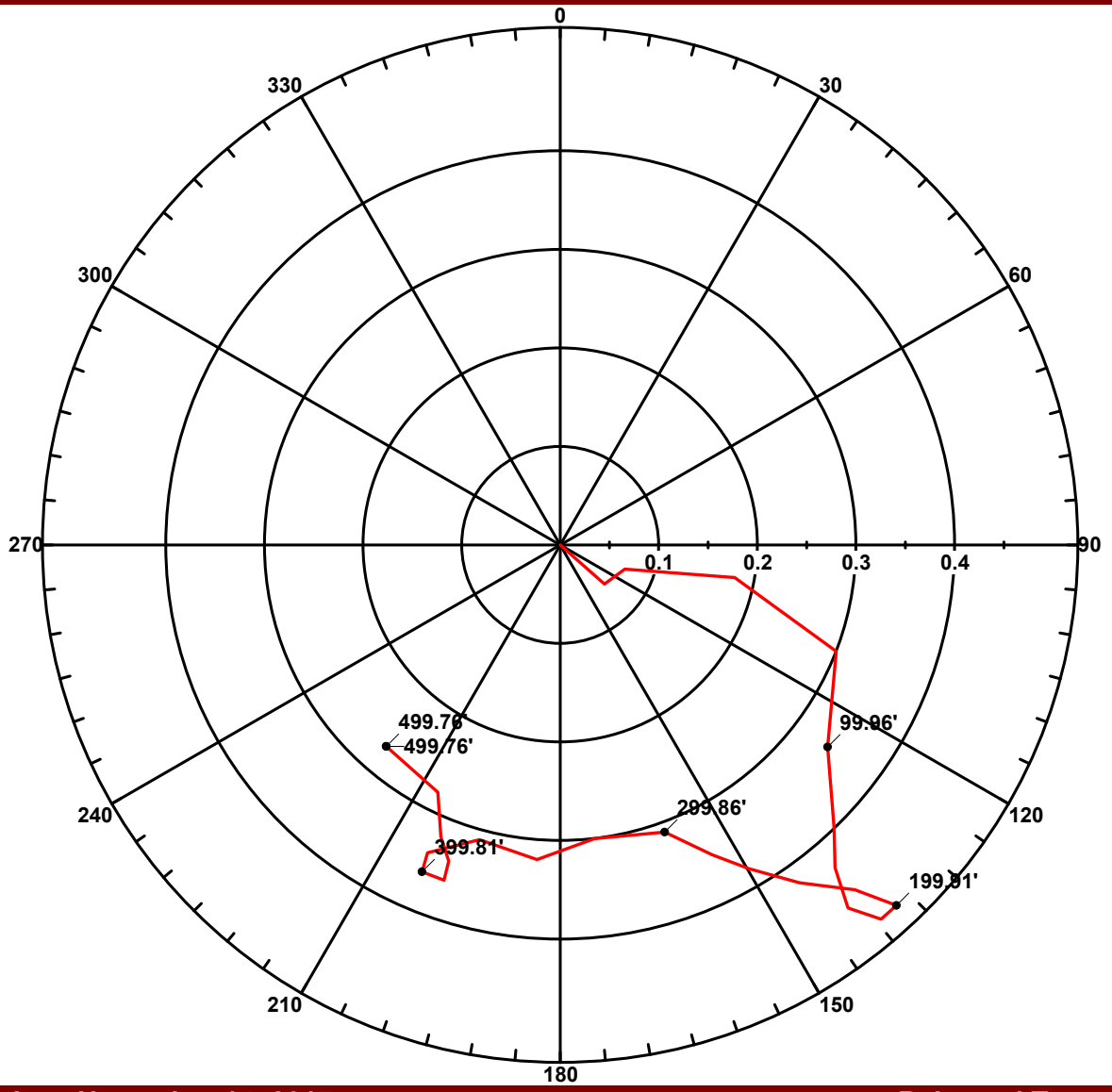
Date of Survey: Tuesday - November 14, 2017 **Balanced Tangential Calculation Method**

Southwest Exploration Services, LLC (480) 926-4558

POLAR VIEW - I-04

FLORENCE COPPER

Drift Distance = 0.27 Feet Drift Bearing = 220.8 Degrees True Vertical Depth = 499.76 Feet



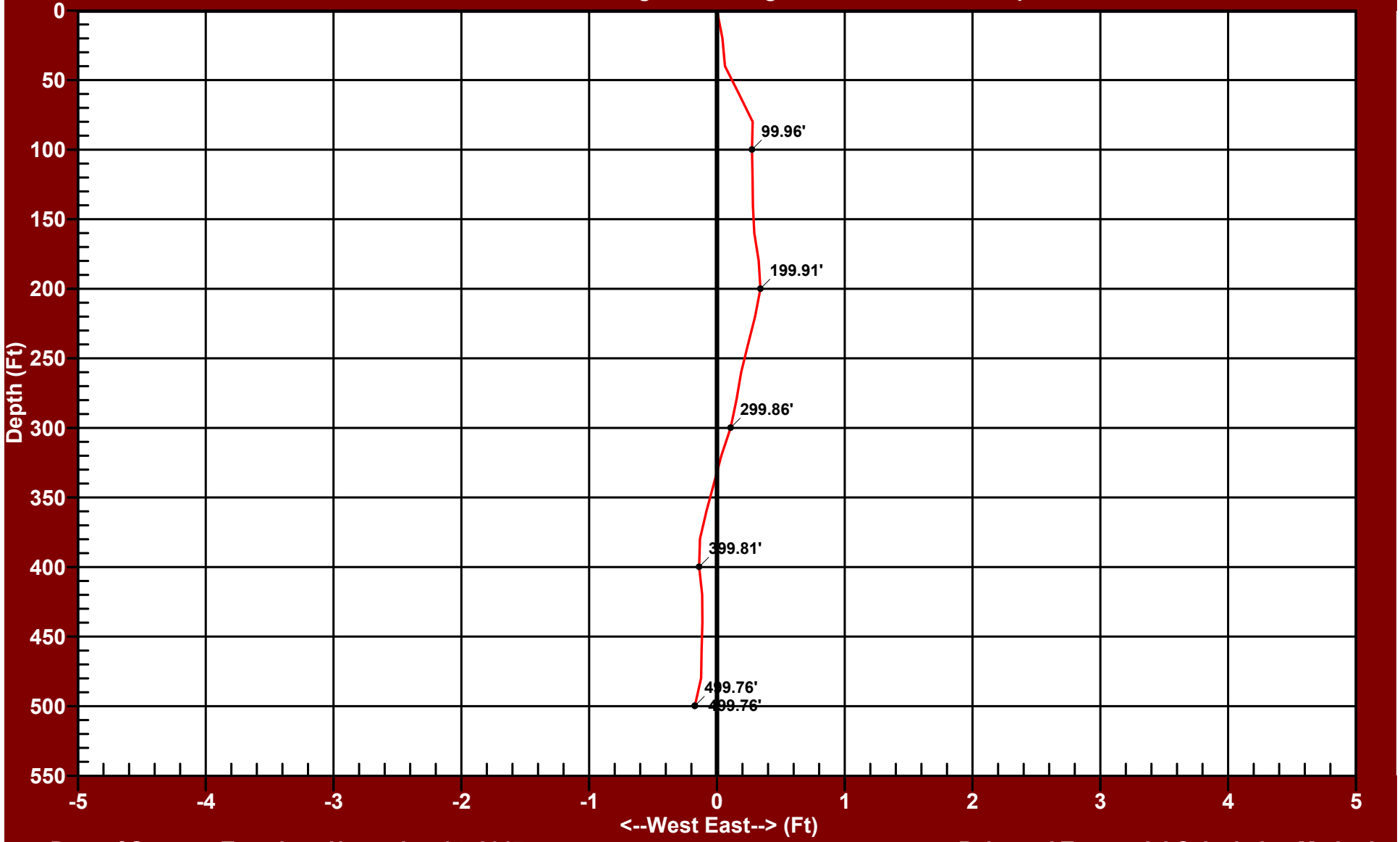
Date of Survey: Tuesday - November 14, 2017 **Balanced Tangential Calculation Method**

Southwest Exploration Services, LLC (480) 926-4558

EASTING RECTANGULAR VIEW - I-04

FLORENCE COPPER

Drift Distance = 0.27 Feet Drift Bearing = 220.8 Degrees True Vertical Depth = 499.76 Feet



Date of Survey: Tuesday - November 14, 2017

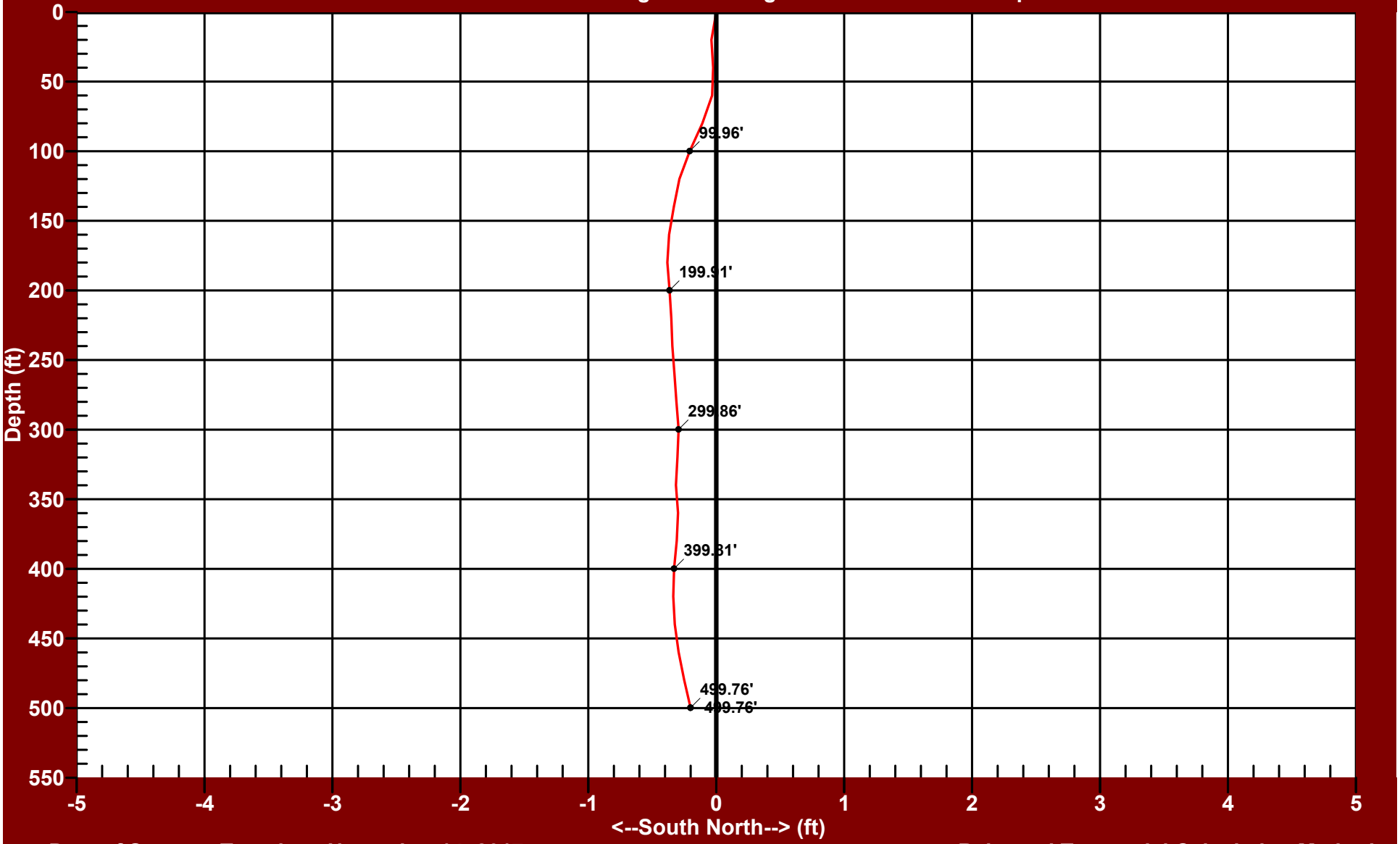
Balanced Tangential Calculation Method

Southwest Exploration Services, LLC (480) 926-4558

NORTHING RECTANGULAR VIEW - I-04

FLORENCE COPPER

Drift Distance = 0.27 Feet Drift Bearing = 220.8 Degrees True Vertical Depth = 499.76 Feet



Date of Survey: Tuesday - November 14, 2017

Balanced Tangential Calculation Method

Southwest Exploration Services, LLC (480) 926-4558

Drift Report

Wellbore DRIFT Interpretation

PREPARED ESPECIALLY FOR

Florence Copper and Florence Copper

I-04

Saturday - March 24, 2018

Southwest Exploration Services, LLC
borehole geophysics & video services

Southwest Exploration Services, LLC
(480) 926-4558

WELLBORE DRIFT INTERPRETATION

Southwest Exploration Services, LLC

(480) 926-4558

Company: Florence Copper **Well Owner:** Florence Copper

County: Pinal **State:** Arizona **Country:** United States

Well Number: I-04 **Survey Date:** Saturday - March 24, 2018 **Magnetic Declination:** Declination Correction Not Used

Field: Florence Copper Project **Drift Calculation Methodology:** Balanced Tangential Method

Location:

Remarks:

Witness: H&A **Vehicle No.:** 500 **Invoice No.:** 1221 **Operator:** E. BEAM **Well Depth:** 776 Feet **Casing size:** 28 Inches

Tool: Compass - 6002 **Lat.:** **Long.:** **Sec.:** **Twp.:** **Rge.:**

MEASURED DATA			DATA COMPUTATIONS						
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	TVD, feet	T. LATITUDE, feet	T. LONGITUDE, feet	DOGLEG SEV., degrees per 20 Feet	DOGLEG SEV., degrees per 100 feet	DRIFT DIST., feet	DRIFT BGR., degrees
500	0.10	307.00	500.00						
520	0.10	216.40	519.99	-0.004	-0.024	0.95	4.26	0.02' (.24")	261.70
540	0.20	197.70	539.98	-0.051	-0.045	0.18	0.97	0.07' (.84")	221.20
560	0.10	112.10	559.97	-0.091	-0.039	0.37	4.08	0.10' (1.20")	203.50
580	0.10	070.30	579.96	-0.092	-0.006	0.20	2.14	0.09' (1.08")	184.00
600	0.00	360.00	599.95	-0.086	0.010	0.94	3.45	0.09' (1.08")	173.10
620	0.10	090.90	619.94	-0.086	0.027	1.00	4.28	0.09' (1.08")	162.40
640	0.10	062.20	639.93	-0.078	0.060	0.58	1.49	0.10' (1.20")	142.50
660	0.10	049.90	659.92	-0.059	0.089	0.98	0.64	0.11' (1.32")	123.40
680	0.10	068.70	679.91	-0.041	0.119	0.99	0.98	0.13' (1.56")	109.20
700	0.10	044.50	699.90	-0.022	0.147	0.55	1.26	0.15' (1.80")	098.60
720	0.20	037.90	719.89	0.018	0.181	0.99	0.35	0.18' (2.16")	084.30
740	0.20	024.30	739.88	0.077	0.217	0.90	0.71	0.23' (2.76")	070.40
760	0.50	031.00	759.87	0.184	0.276	0.33	0.35	0.33' (3.96")	056.40
780	0.40	031.10	779.86	0.319	0.357	0.22	0.01	0.48' (5.76")	048.30
800	0.30	039.60	799.85	0.419	0.426	0.36	0.44	0.60' (7.20")	045.50
820	0.60	061.30	819.84	0.510	0.551	0.86	1.13	0.75' (9.00")	047.20
840	0.60	041.60	839.83	0.639	0.712	0.96	1.03	0.96' (11.52")	048.10

True Vertical Depth: 1219.65' **Final Drift Distance:** 4.30' (51.60") **Final Drift Bearing:** 37.00°

Note: Magnetic Declination is not used because it is not a factor in the calculation of well drift or alignment. Magnetic Declination is only important if attempting to hit a target or miss another well and then it is included in the calculations.

WELLBORE DRIFT INTERPRETATION

Southwest Exploration Services, LLC

I-04

(480) 926-4558

MEASURED DATA			DATA COMPUTATIONS						
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	TVD, feet	T. LATITUDE, feet	T. LONGITUDE, feet	DOGLEG SEV., degrees per 20 Feet	DOGLEG SEV., degrees per 100 feet	DRIFT DIST., feet	DRIFT BRG., degrees
860	0.50°	057.00°	859.82	0.765	0.855	0.40	0.80	1.15' (13.80")	048.20
880	0.40°	044.70°	879.81	0.862	0.977	1.00	0.64	1.30' (15.60")	048.60
900	0.50°	049.60°	899.80	0.968	1.093	1.00	0.26	1.46' (17.52")	048.50
920	0.60°	052.70°	919.79	1.088	1.243	0.32	0.16	1.65' (19.80")	048.80
940	0.50°	034.00°	939.78	1.224	1.375	0.92	0.97	1.84' (22.08")	048.30
960	0.50°	040.00°	959.77	1.363	1.480	0.74	0.31	2.01' (24.12")	047.40
980	0.70°	047.70°	979.76	1.512	1.626	0.58	0.40	2.22' (26.64")	047.10
1,000	0.60°	036.10°	999.76	1.679	1.778	0.06	0.61	2.45' (29.40")	046.60
1,020	0.50°	022.80°	1,019.75	1.844	1.874	0.60	0.69	2.63' (31.56")	045.50
1,040	0.30°	026.20°	1,039.74	1.971	1.931	0.68	0.18	2.76' (33.12")	044.40
1,060	0.50°	023.40°	1,059.73	2.098	1.989	0.84	0.15	2.89' (34.68")	043.50
1,080	0.80°	017.90°	1,079.72	2.311	2.067	0.11	0.29	3.10' (37.20")	041.80
1,100	0.60°	040.40°	1,099.71	2.524	2.178	0.94	1.17	3.33' (39.96")	040.80
1,120	0.50°	040.30°	1,119.70	2.670	2.302	0.92	0.01	3.53' (42.36")	040.80
1,140	0.40°	023.50°	1,139.69	2.801	2.386	0.01	0.88	3.68' (44.16")	040.40
1,160	0.40°	022.80°	1,159.68	2.929	2.441	0.72	0.04	3.81' (45.72")	039.80
1,180	0.40°	017.70°	1,179.67	3.060	2.489	0.46	0.27	3.94' (47.28")	039.10
1,200	0.60°	015.10°	1,199.66	3.228	2.538	0.84	0.14	4.11' (49.32")	038.20
1,220	0.60°	012.60°	1,219.65	3.431	2.588	0.45	0.13	4.30' (51.60")	037.00

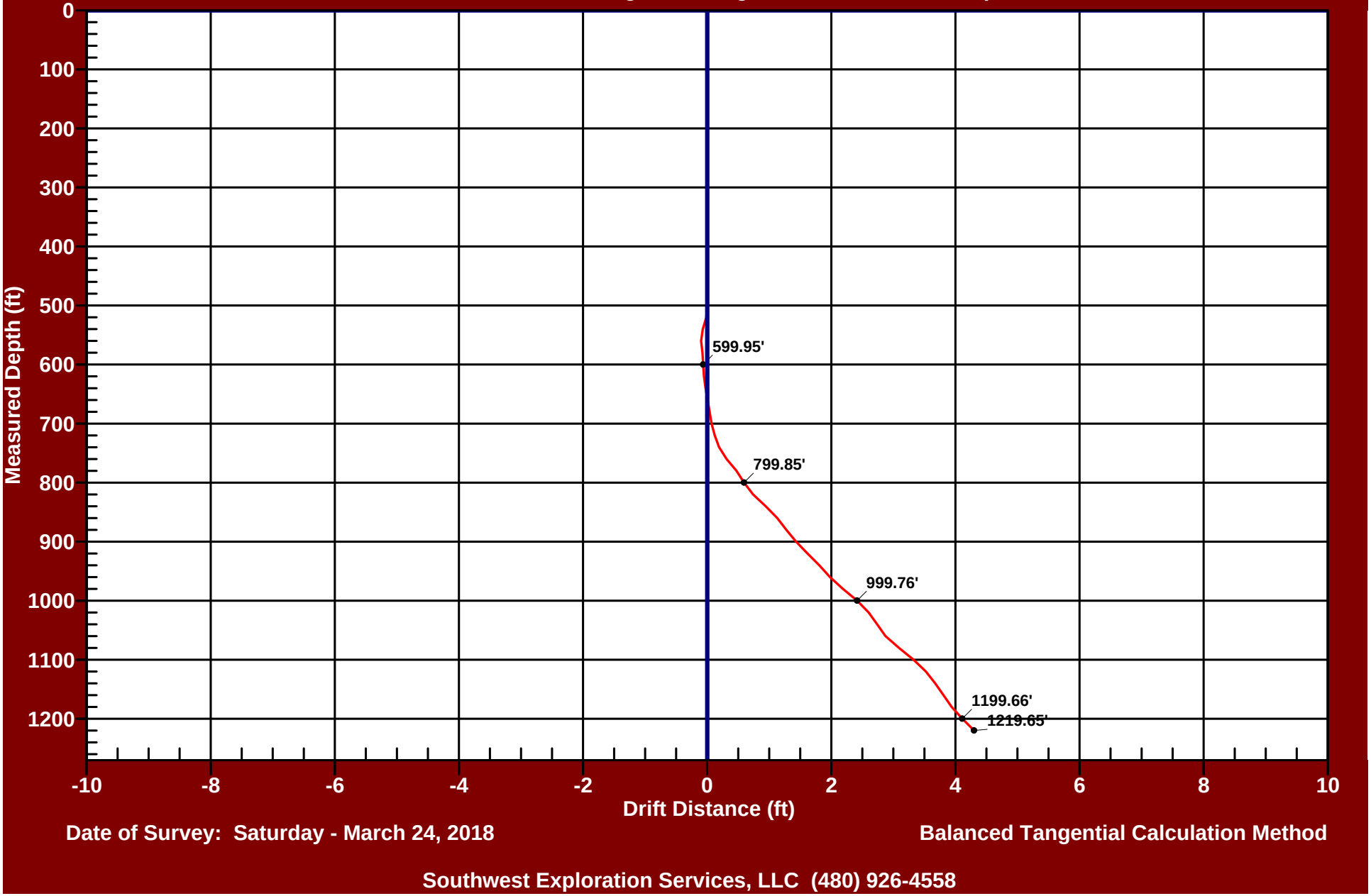
Page No. 2 **True Vertical Depth: 1219.65'** **Final Drift Distance: 4.30' (51.60")** **Final Drift Bearing: 37.00°**

PLANE OF DRIFT VIEW - I-04

Florence Copper

Florence Copper

Drift Distance = 4.30 Feet Drift Bearing = 37.0 Degrees True Vertical Depth = 1219.65 Feet



Date of Survey: Saturday - March 24, 2018

Balanced Tangential Calculation Method

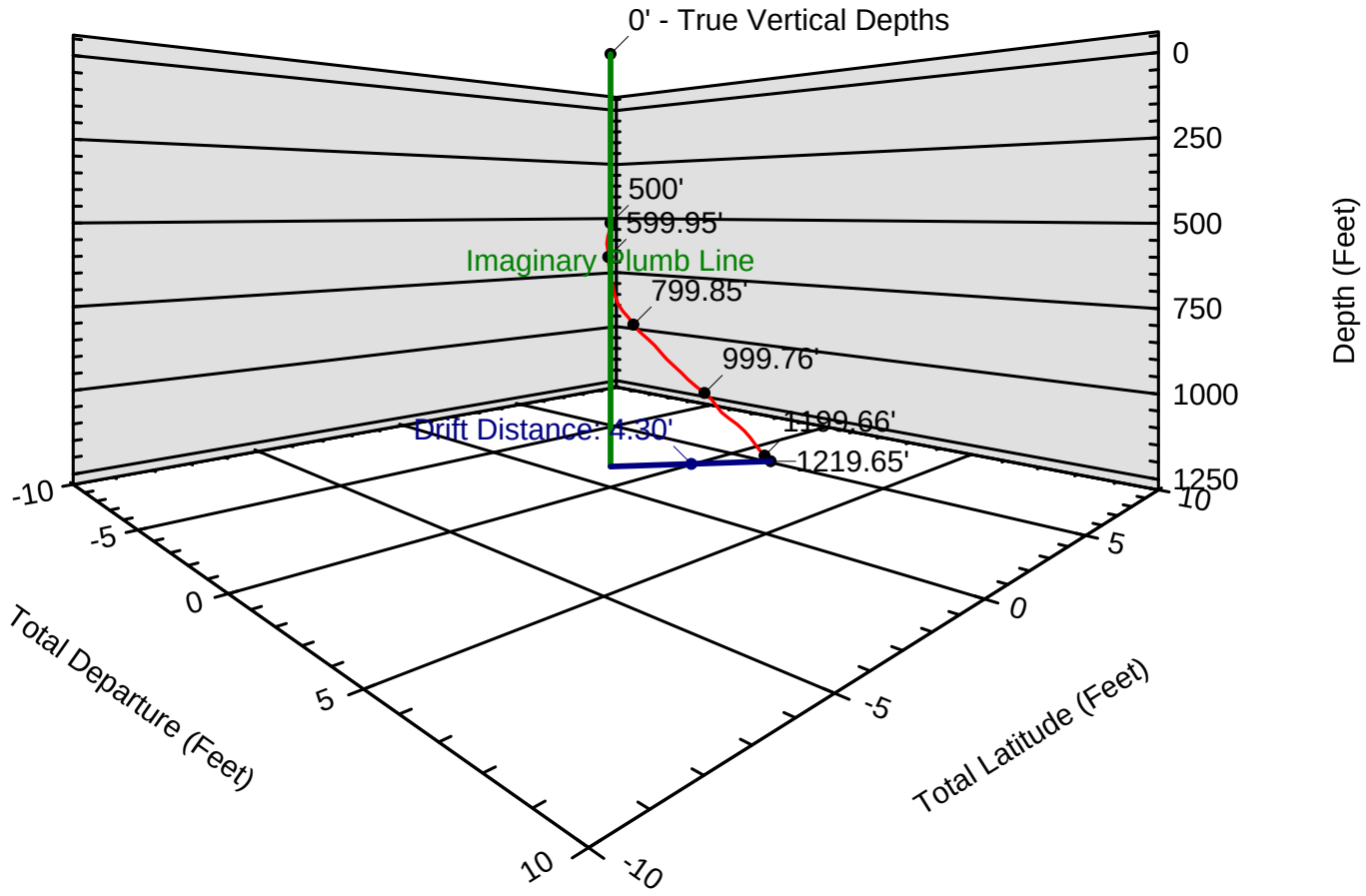
Southwest Exploration Services, LLC (480) 926-4558

3D PROJECTION VIEW - I-04

Florence Copper
Florence Copper

Drift Distance = 4.30 Feet Drift Bearing = 37.0 Degrees True Vertical Depth = 1219.65 Feet

226.0



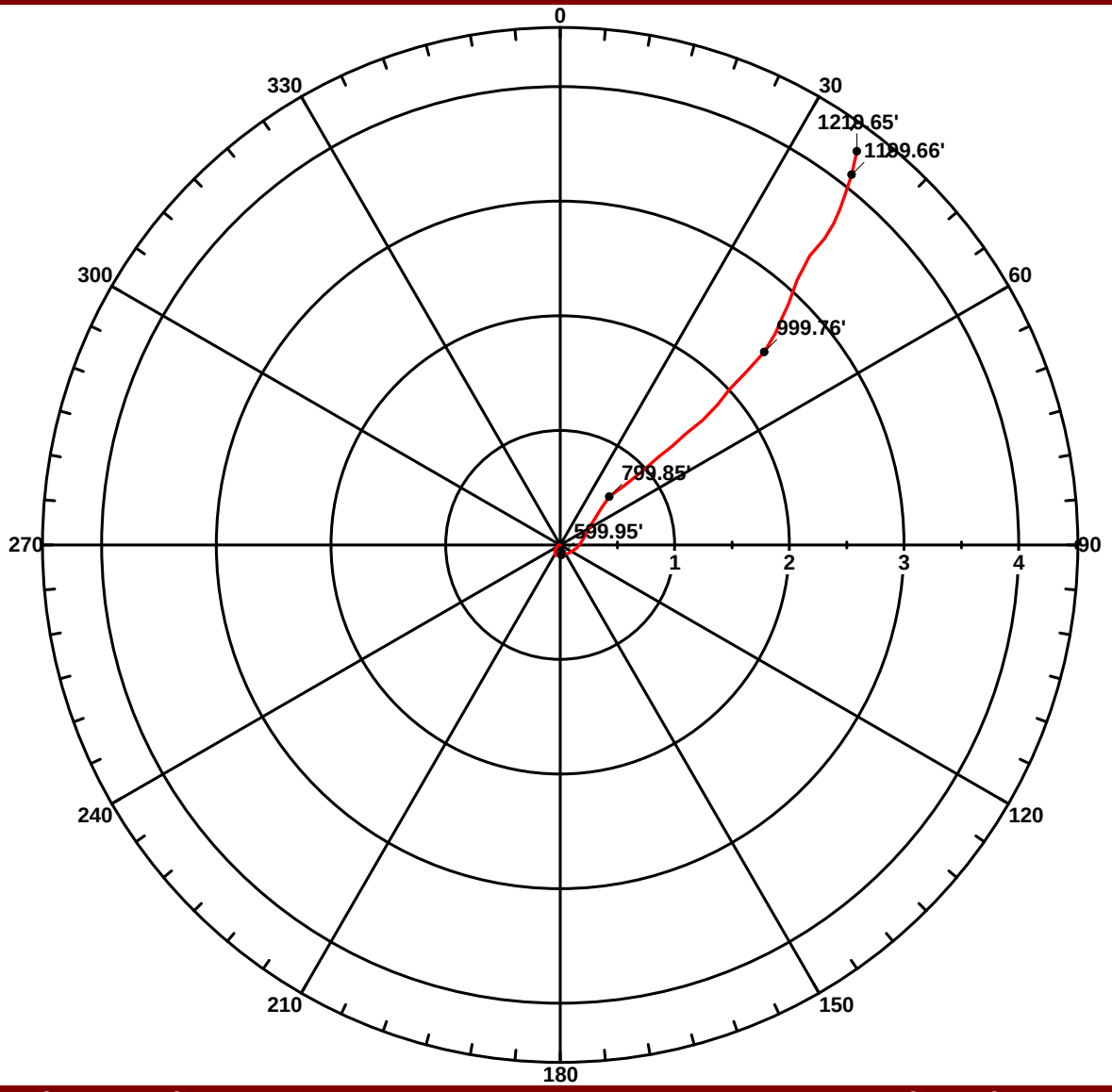
Date of Survey: Saturday - March 24, 2018 **Balanced Tangential Calculation Method**

Southwest Exploration Services, LLC (480) 926-4558

POLAR VIEW - I-04

Florence Copper
Florence Copper

Drift Distance = 4.30 Feet Drift Bearing = 37.0 Degrees True Vertical Depth = 1219.65 Feet



Date of Survey: Saturday - March 24, 2018 **Balanced Tangential Calculation Method**

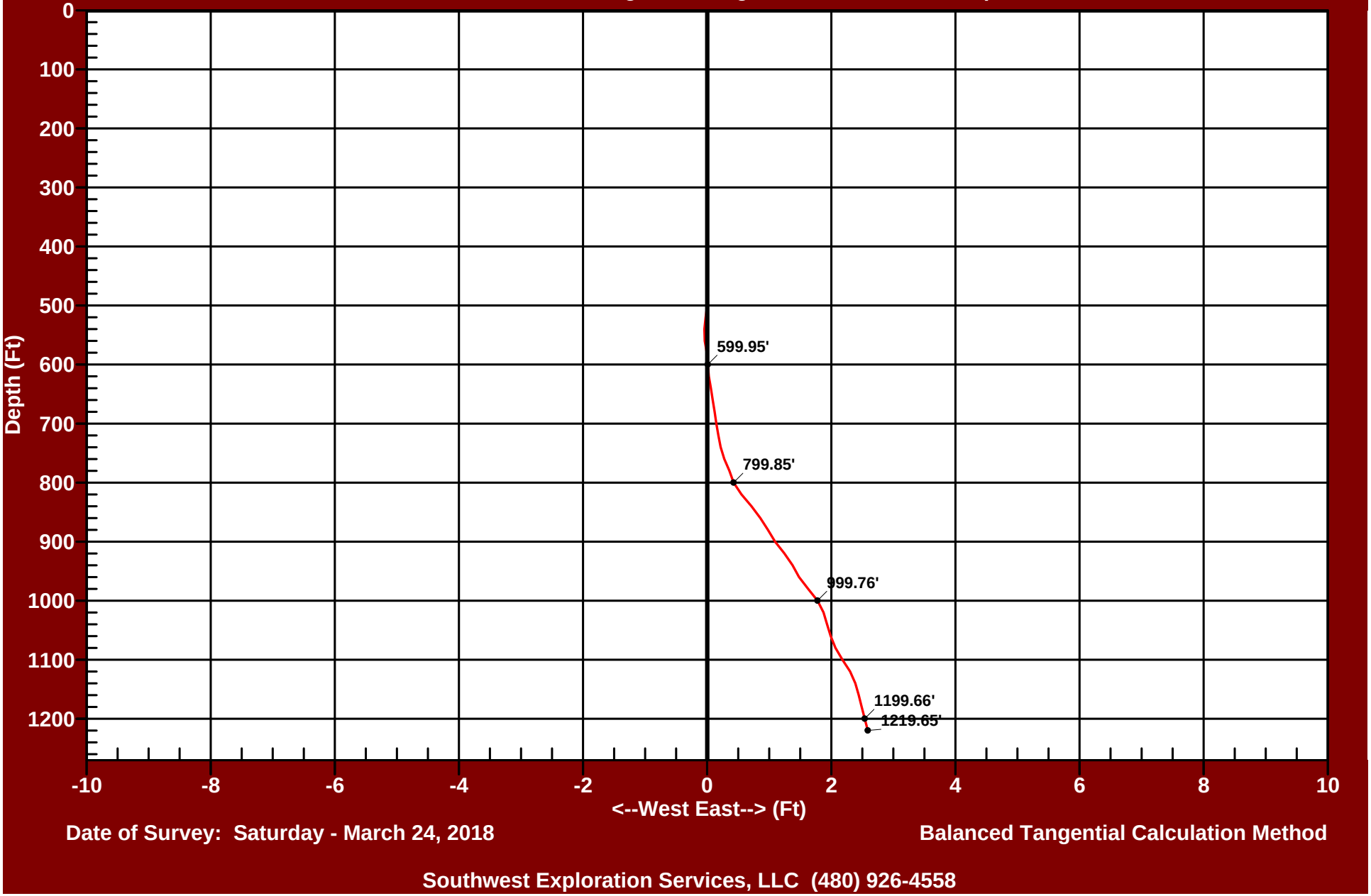
Southwest Exploration Services, LLC (480) 926-4558

EASTING RECTANGULAR VIEW - I-04

Florence Copper

Florence Copper

Drift Distance = 4.30 Feet Drift Bearing = 37.0 Degrees True Vertical Depth = 1219.65 Feet



Date of Survey: Saturday - March 24, 2018

Balanced Tangential Calculation Method

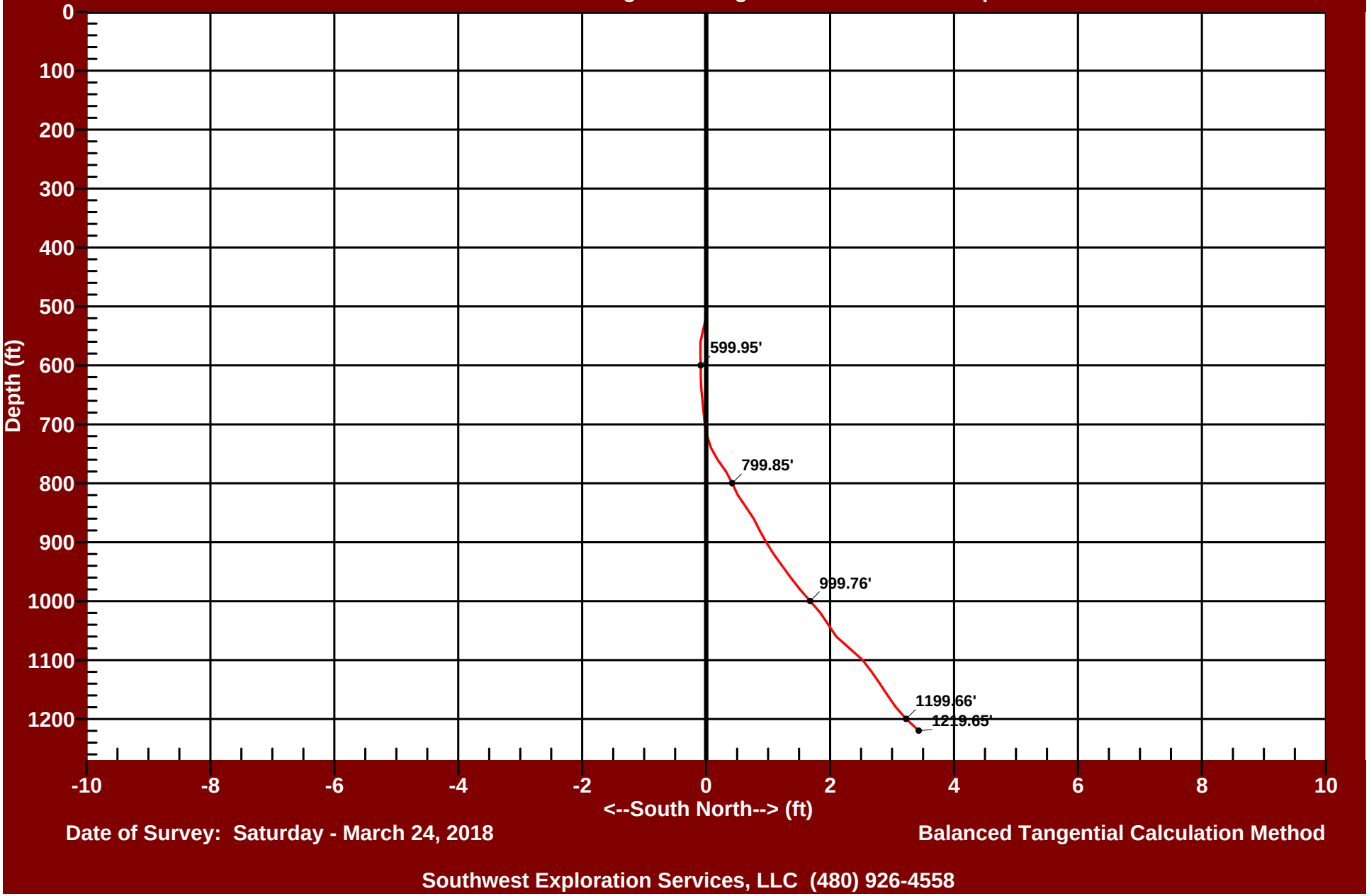
Southwest Exploration Services, LLC (480) 926-4558

NORTHING RECTANGULAR VIEW - I-04

Florence Copper

Florence Copper

Drift Distance = 4.30 Feet Drift Bearing = 37.0 Degrees True Vertical Depth = 1219.65 Feet



Date of Survey: Saturday - March 24, 2018

Balanced Tangential Calculation Method

Southwest Exploration Services, LLC (480) 926-4558

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY	FLORENCE COPPER				
WELL ID	I-04				
FIELD	FLORENCE COPPER				
COUNTY	PINAL			STATE	ARIZONA
					OTHER SERVICES
TYPE OF LOGS:	**GAMMA - CALIPER**				SONIC
MORE:	**TEMP. / FLUID RES.**				4 PI DENSITY
LOCATION					DUAL DENSITY
	SEC	TWP	RGE		
PERMANENT DATUM			ELEVATION	K.B.	
LOG MEAS. FROM	GROUND LEVEL		ABOVE PERM. DATUM	D.F.	
DRILLING MEAS. FROM	GROUND LEVEL			G.L.	

DATE	5-7-18			TYPE FLUID IN HOLE		FORMATION WATER	
RUN No	1			MUD WEIGHT		N/A	
TYPE LOG	GAMMA - CALIPER - TFR			VISCOSITY		N/A	
DEPTH-DRILLER	1200 FT.			LEVEL		~ 226 FT.	
DEPTH-LOGGER	1193 FT.			MAX. REC. TEMP.		29.36 DEG. C	
BTM LOGGED INTERVAL	1193 FT.			IMAGE ORIENTED TO:		N/A	
TOP LOGGED INTERVAL	SURFACE			SAMPLE INTERVAL		0.2 FT.	
DRILLER / RIG#	HYDRO RESOURCES			LOGGING TRUCK		TRUCK #900	
RECORDED BY / Logging Eng.	A. OLSON / M. QUINONES			TOOL STRING/SN		MSI COMBO TOOL SN 4183	
WITNESSED BY	COLLIN - H&A			LOG TIME:ON SITE/OFF SITE		12:00 P.M.	
RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT.	14 IN.	STEEL	SURFACE	500 FT.
2	20 IN.	40 FT.	500 FT.	5 IN.	FG	SURFACE	500 FT.
3	12 1/4 IN.	500 FT.	TOTAL DEPTH	5 IN.	PVC	500 FT.	TOTAL DEPTH
COMMENTS:							

.

Tool Summary:

Date	5-7-18	**Date**	5-7-18	**Date**	5-7-18
Run No.	1	**Run No.**	2	**Run No.**	3
Tool Model	MSI COMBO TOOL	**Tool Model**	ALT 4 RX SONIC	**Tool Model**	COMPROBE 4 PI
Tool SN	4183	**Tool SN**	4572	**Tool SN**	6009
From	SURFACE	**From**	200 FT.	**From**	SURFACE
To	1193 FT.	**To**	1193 FT.	**To**	1193 FT.
Recorded By	A. OLSON	**Recorded By**	A. OLSON	**Recorded By**	A. OLSON
Truck No	900	**Truck No**	900	**Truck No**	900
Operation Check	5-4-18	**Operation Check**	5-4-18	**Operation Check**	5-4-18
Calibration Check	5-4-18	**Calibration Check**	N/A	**Calibration Check**	N/A
Time Logged	12:10 P.M.	**Time Logged**	1:05 P.M.	**Time Logged**	2:00 P.M.

Date	5-7-18	**Date**		**Date**	
Run No.	4	**Run No.**	5	**Run No.**	6
Tool Model	ALT QL DENSITY	**Tool Model**		**Tool Model**	
Tool SN	6187	**Tool SN**		**Tool SN**	
From	SURFACE	**From**		**From**	
To	1193 FT.	**To**		**To**	
Recorded By	A. OLSON	**Recorded By**		**Recorded By**	
Truck No	900	**Truck No**		**Truck No**	
Operation Check	5-4-18	**Operation Check**		**Operation Check**	
Calibration Check	N/A	**Calibration Check**		**Calibration Check**	
Time Logged	2:50 P.M.	**Time Logged**		**Time Logged**	

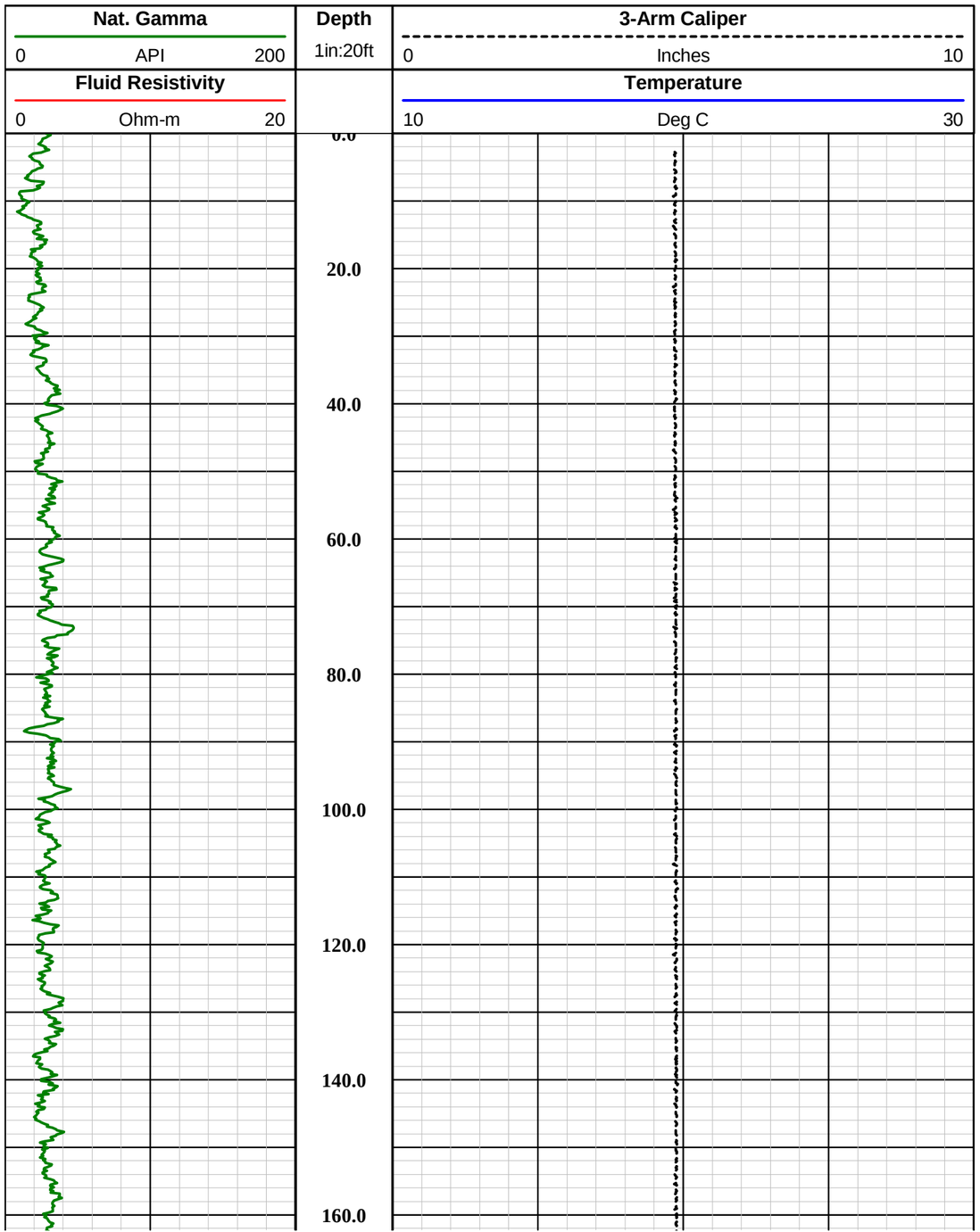
Additional Comments:

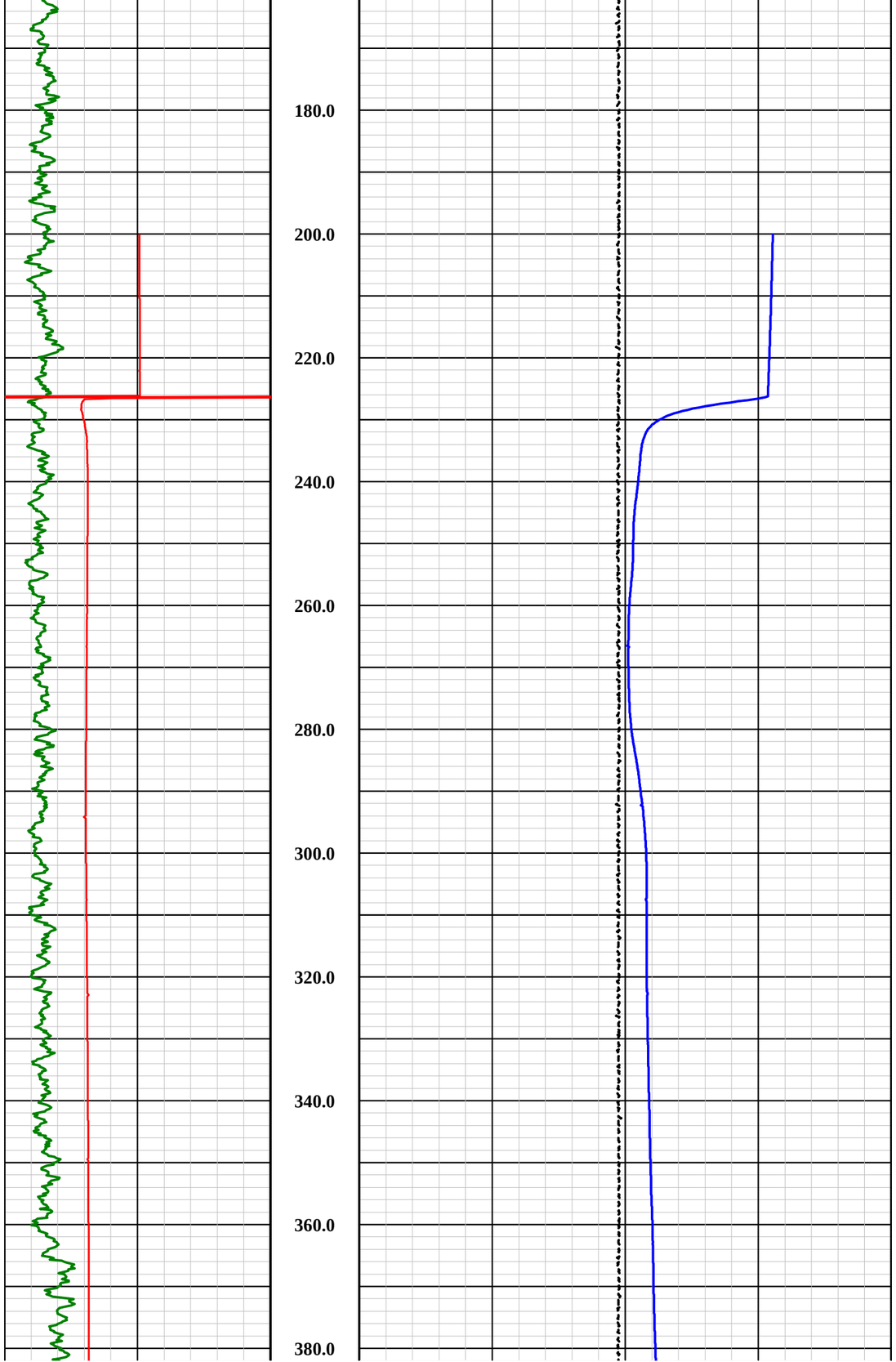
Caliper Arms Used: 9 IN. **Calibration Points:** 4 IN. & 12 IN.

E-Log Calibration Range: N/A **Calibration Points:** N/A

Disclaimer:

All interpretations of log data are opinions based on inferences from electrical or other measurements. We do not guarantee the accuracy or correctness of any interpretations or recommendations and shall not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our employees or agents. These interpretations are also subject to our general terms and conditions set out in our current Service Invoice.

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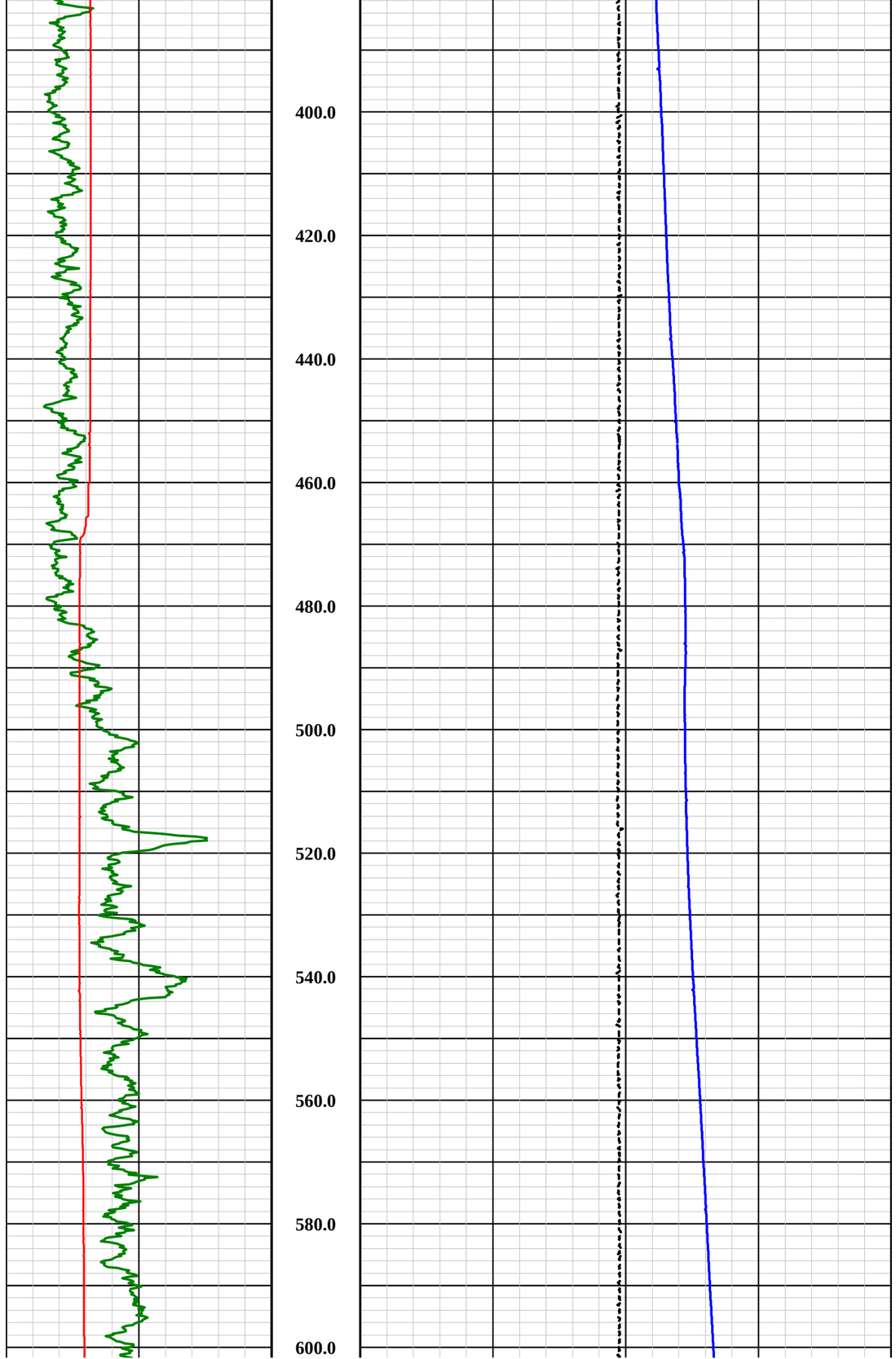
380.0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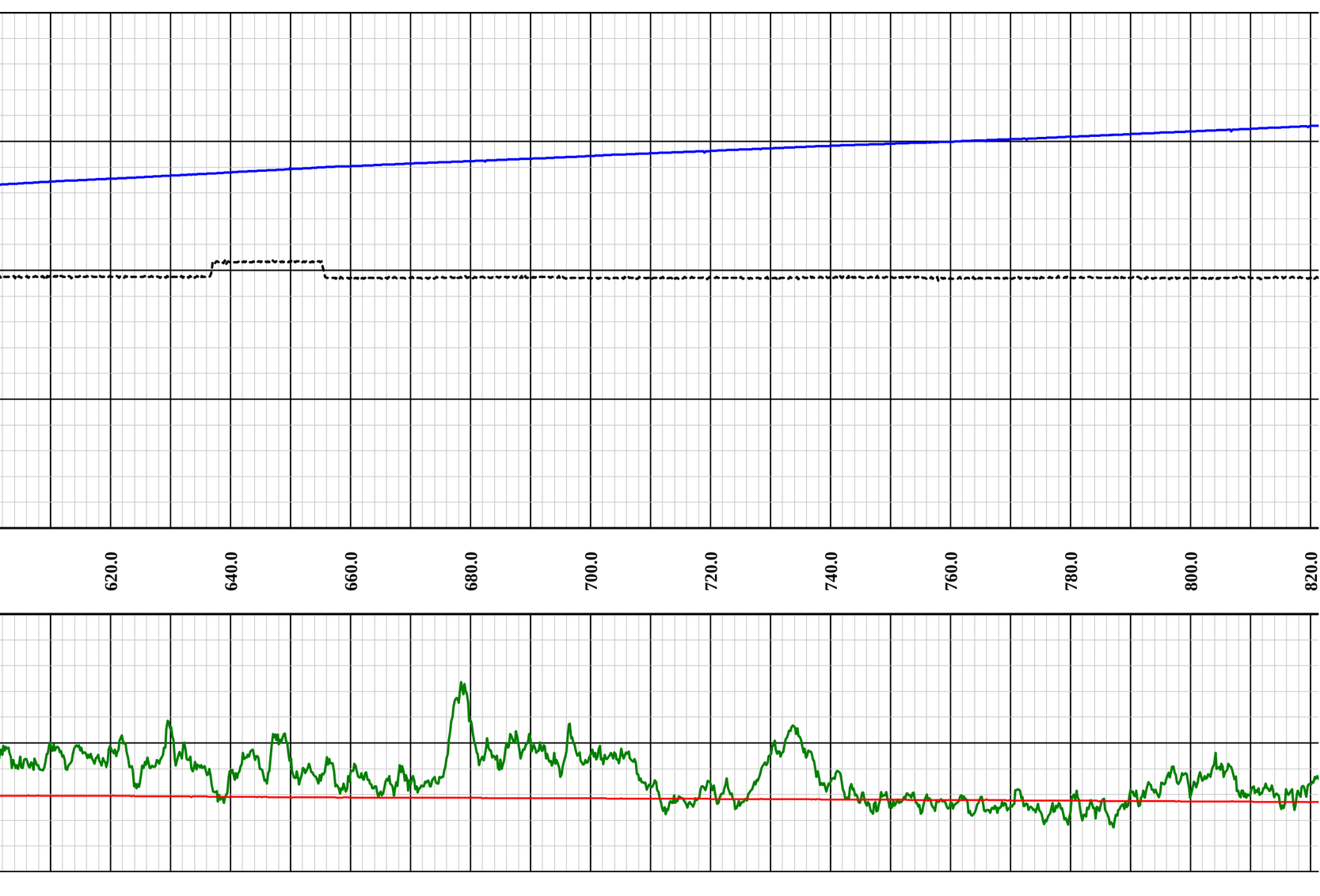
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740.0
760.0
780.0
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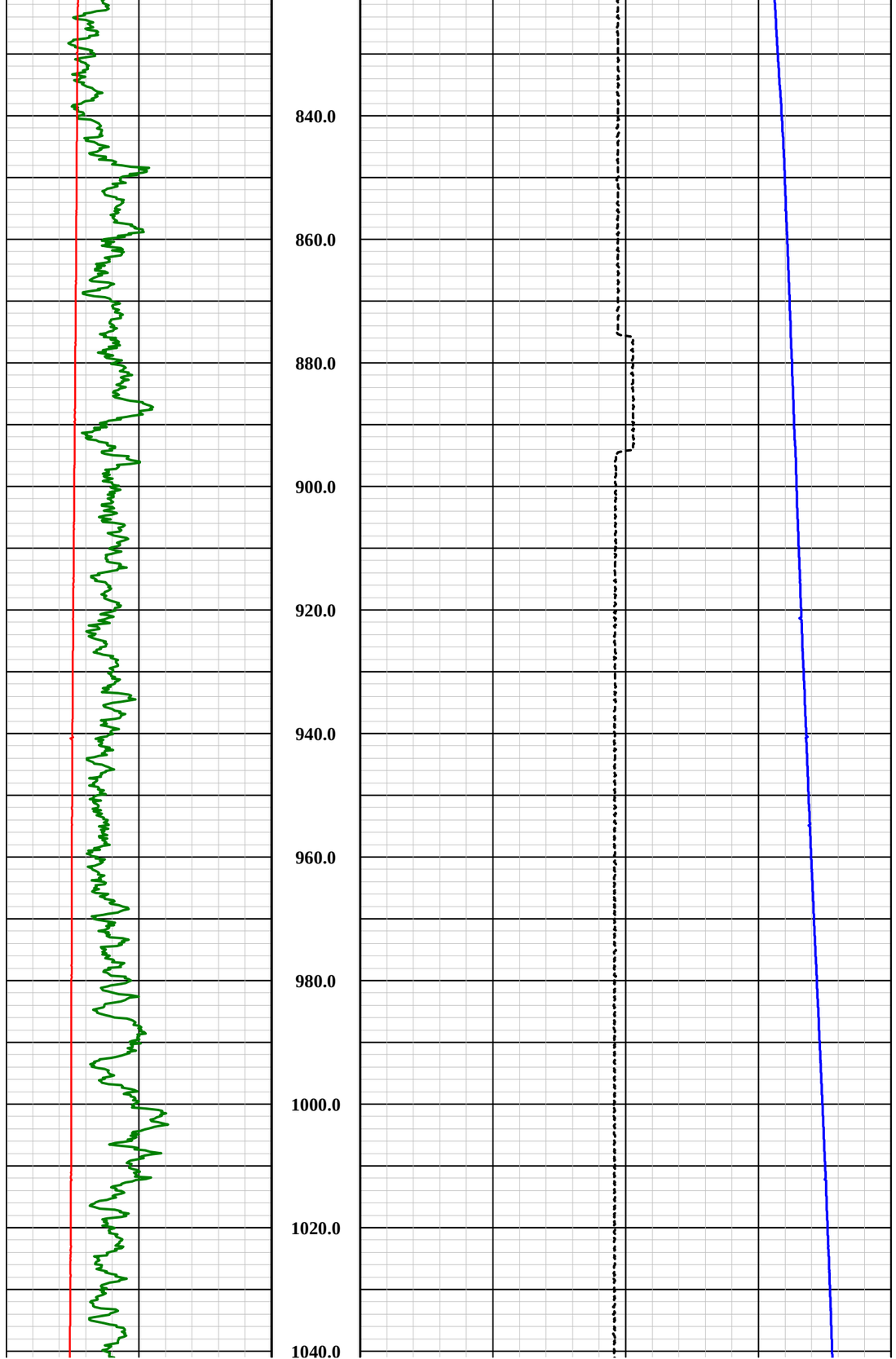
820.0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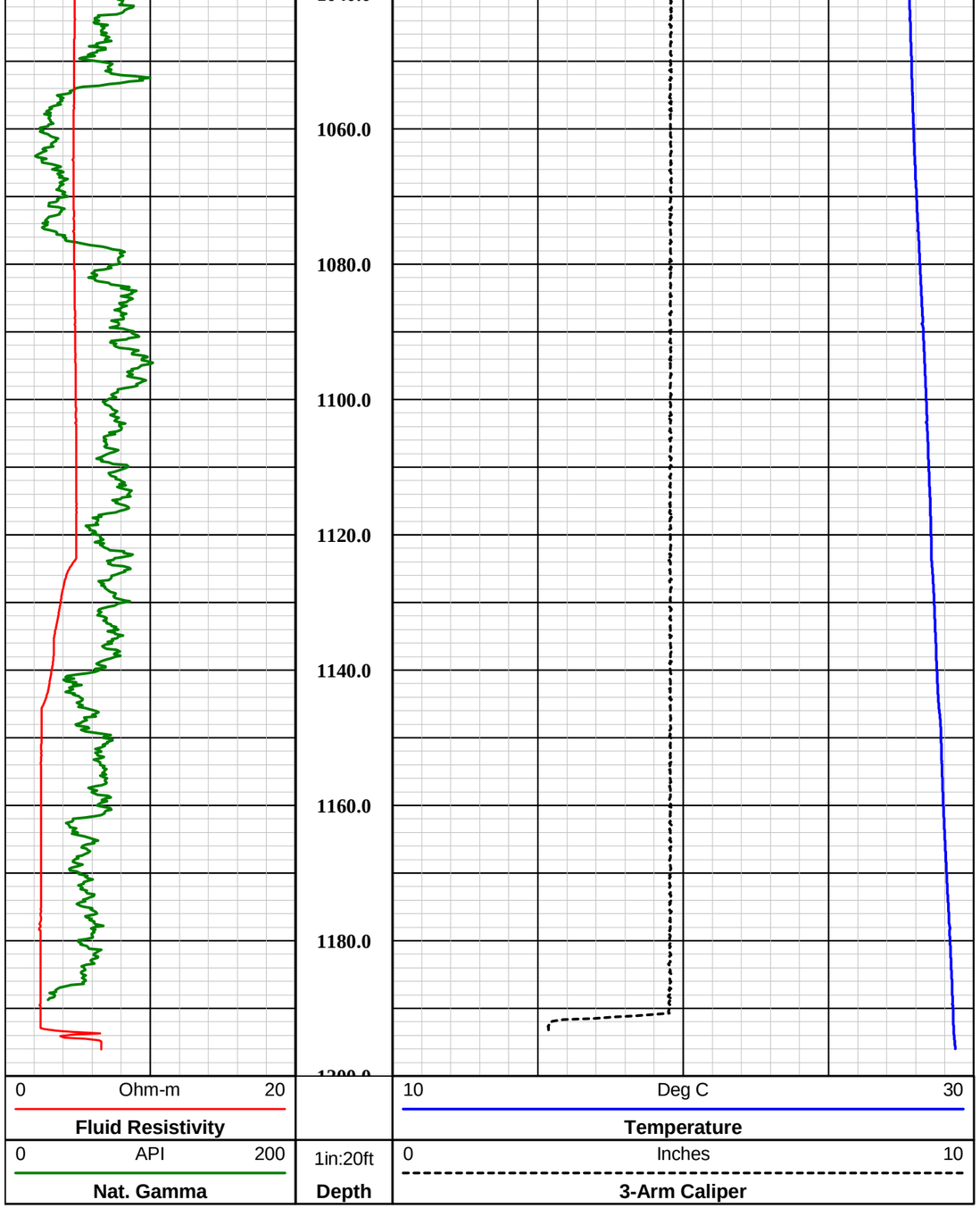
900.0
920.0
940.0
960.0
980.0
1000.0
1020.0
1040.0

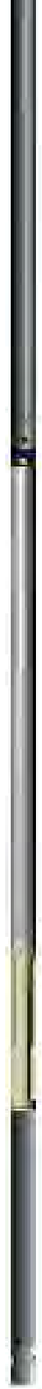


MSI Gamma-Caliper-Temperature-Fluid Resistivity

Probe Top = Depth Ref.

Single Conductor MSI Probe Top

Probe Length = 2.59 m or 8.5 ft
Probe Weight = 6.80 kg or 15.0 lbs



Natural Gamma and Caliper can only be collected logging up hole.

Fluid Temperature/Resistivity can only be collected logging down hole.

Temperature Rating: 70 Deg C (158 Deg F)
Presure Rating: 200 bar (2900 psi)

Natural Gamma Ray = 0.76 m (29.75 in)

NOTE: Lengths on a particular tool may vary from those listed on this document due to probe sizes and styles utilized

3-Arm Caliper = 1.44 m (56.75 in)

Distance from tool top: 2.20 m (86.5 in)

Available Arm Sizes: 3", 9", and 15"

TFR (Temperature/Fluid Resistivity) = 0.39 m (15.5 in)

1.375" or 34.9 mm Diameter

Southwest Exploration Services, LLC
borehole geophysics & video services

Company	FLORENCE COPPER
Well	I-04
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final **GCT Summary**

APPENDIX F

SAPT Documentation

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
STANDARD ANNULAR PRESSURE TEST

Operator FLORENCE COPPER, INC
Address 1575 W. HUNT HWY
FLORENCE, AZ 85132
Well Name I-04

State Permit No. P-101704
USEPA Permit No. R9UIC-AZ3-FY11-1
Date of Test 4/26/2018
Well Type ENV - INJECTION - Class III

LOCATION INFORMATION SE Quarter of the NW Quarter of the SW Quarter of Section 28; Range 9E; Township 4S; County PINAL;

Company Representative IAN REAM; Field Inspector LAUREN CANDREVA;

Type of Pressure Gauge Pressure transducer with data logger inch face; 300 psi full scale; 0.001 psi increments;

New Gauge? Yes ☑ No ☐ If no, date of calibration ____ Calibration certification submitted? Yes ☐ No ☑

TEST RESULTS
Readings must be taken at least every 10 minutes for a minimum of 30 minutes for Class II, III and V wells and 60 minutes for Class I wells.
For Class II wells, annulus pressue should be at least 300 psig. For Class I wells, annulus pressure should be the greater of 300 psig or 100 psi above maximum permitted injection pressure.
Original chart recordings must be submitted with this form.

5-year or annual test on time? Yes ☐ No ☑
2-year test for TA'd wells on time? Yes ☐ No ☑
After rework? Yes ☐ No ☑
Newly permitted well? Yes ☑ No ☐

.

Time	Pressure (in psig) Annulus	Tubing
11:47	165.14	same
11:57	165.31	same
12:07	165.36	same
12:17	165.35	same

Casing size 5" - NOMINAL
Tubing size 2"
Packer type INFLATABLE PACKER
Packer set @ 5.67(top), 502.04(bottom)
Top of Permitted Injection Zone 405 feet
Is packer 100 ft or less above top of Injection Zone ? Yes ☑ No ☐
If not, please submit a justification.
Fluid return (gal.) 0.49
Comments: Pressure data collected by Level TROLL 400

Test Pressures: Max. Allowable Pressure Change: Initial test pressure x 0.05 8.26 psi
Test Period Pressure change 0.21 psi

Test Passed ☑ Test Failed ☐

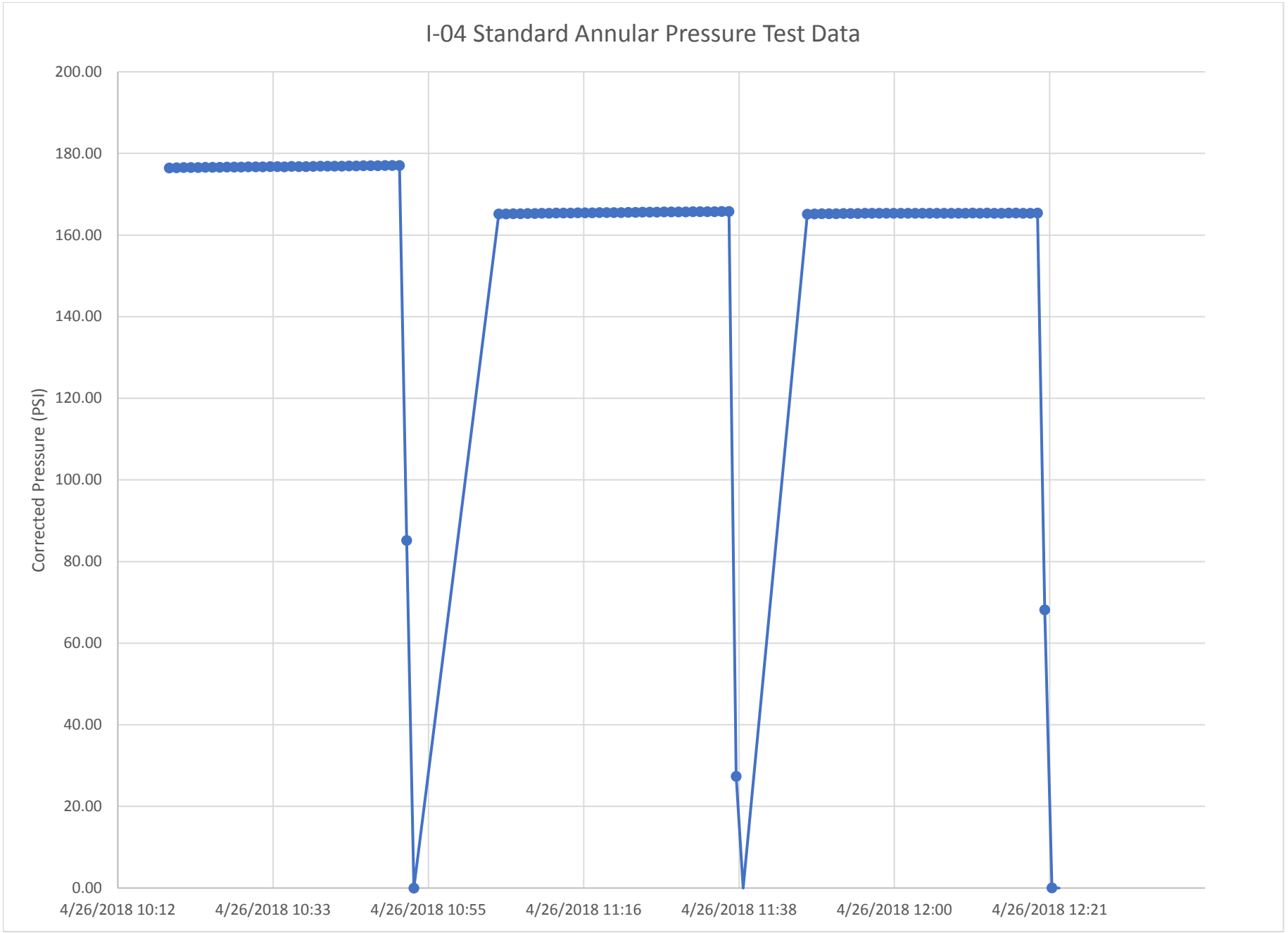
If failed test, well must be shut in, no injection can occur, and USEPA must be contacted within 24 hours. Corrective action needs to occur, the well retested, and written authorization received before injection can recommence.

I certify under penalty of law that this document and all attachments are, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (See 40 CFR 144.32(d))

Ian Ream
Printed Name of Company Representative

Signature of Company Representative

9-12-2018
Date


I-04 Standard Annular Pressure Test Data
Corrected Pressure (PSI)
200.00
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
4/26/2018 10:12
4/26/2018 10:33
4/26/2018 10:55
4/26/2018 11:16
4/26/2018 11:38
4/26/2018 12:00
4/26/2018 12:21

Well I-04 SAPT Data		
Tranducer Serial Number:	519257	
Tranducer Model:	Level TROLL 400 non-vented 300 psi	
Date and Time	Pressure (PSI)	Corrected Presssure (PSI) (Sensor pressure - barometric pressure)
4/26/2018 10:19	190.35	176.43
4/26/2018 10:20	190.41	176.49
4/26/2018 10:21	190.46	176.54
4/26/2018 10:22	190.45	176.53
4/26/2018 10:23	190.46	176.54
4/26/2018 10:24	190.52	176.60
4/26/2018 10:25	190.51	176.59
4/26/2018 10:26	190.53	176.60
4/26/2018 10:27	190.58	176.66
4/26/2018 10:28	190.55	176.62
4/26/2018 10:29	190.57	176.65
4/26/2018 10:30	190.60	176.68
4/26/2018 10:31	190.61	176.69
4/26/2018 10:32	190.65	176.73
4/26/2018 10:33	190.67	176.75
4/26/2018 10:34	190.67	176.75
4/26/2018 10:35	190.63	176.71
4/26/2018 10:36	190.71	176.79
4/26/2018 10:37	190.67	176.75
4/26/2018 10:38	190.68	176.76
4/26/2018 10:39	190.74	176.82
4/26/2018 10:40	190.77	176.85
4/26/2018 10:41	190.79	176.87
4/26/2018 10:42	190.80	176.87
4/26/2018 10:43	190.81	176.89
4/26/2018 10:44	190.85	176.93
4/26/2018 10:45	190.87	176.95
4/26/2018 10:46	190.91	176.98
4/26/2018 10:47	190.91	176.99
4/26/2018 10:48	190.92	177.00
4/26/2018 10:49	190.96	177.04
4/26/2018 10:50	190.97	177.05
4/26/2018 10:51	190.99	177.06
4/26/2018 10:52	99.11	85.19
4/26/2018 10:53	13.92	0.00
4/26/2018 11:04	179.08	165.16
4/26/2018 11:05	179.09	165.17
4/26/2018 11:06	179.12	165.20
4/26/2018 11:07	179.15	165.23
4/26/2018 11:08	179.20	165.28
4/26/2018 11:09	179.20	165.28

Well I-04 SAPT Data		
Tranducer Serial Number:	519257	
Tranducer Model:	Level TROLL 400 non-vented 300 psi	
Date and Time	Pressure (PSI)	Corrected Presssure (PSI) (Sensor pressure - barometric pressure)
4/26/2018 11:10	179.23	165.31
4/26/2018 11:11	179.26	165.34
4/26/2018 11:12	179.29	165.37
4/26/2018 11:13	179.30	165.38
4/26/2018 11:14	179.31	165.39
4/26/2018 11:15	179.34	165.42
4/26/2018 11:16	179.36	165.44
4/26/2018 11:17	179.39	165.47
4/26/2018 11:18	179.40	165.48
4/26/2018 11:19	179.43	165.50
4/26/2018 11:20	179.45	165.52
4/26/2018 11:21	179.44	165.52
4/26/2018 11:22	179.45	165.53
4/26/2018 11:23	179.48	165.56
4/26/2018 11:24	179.51	165.59
4/26/2018 11:25	179.53	165.61
4/26/2018 11:26	179.55	165.63
4/26/2018 11:27	179.58	165.65
4/26/2018 11:28	179.57	165.64
4/26/2018 11:29	179.59	165.67
4/26/2018 11:30	179.59	165.67
4/26/2018 11:31	179.64	165.71
4/26/2018 11:32	179.62	165.70
4/26/2018 11:33	179.65	165.73
4/26/2018 11:34	179.63	165.71
4/26/2018 11:35	179.67	165.75
4/26/2018 11:36	179.68	165.76
4/26/2018 11:37	41.30	27.38
4/26/2018 11:38	13.91	-0.02
4/26/2018 11:47	179.06	165.14
4/26/2018 11:48	179.09	165.17
4/26/2018 11:49	179.15	165.23
4/26/2018 11:50	179.15	165.23
4/26/2018 11:51	179.16	165.24
4/26/2018 11:52	179.21	165.29
4/26/2018 11:53	179.21	165.29
4/26/2018 11:54	179.22	165.30
4/26/2018 11:55	179.24	165.32
4/26/2018 11:56	179.27	165.35
4/26/2018 11:57	179.23	165.31
4/26/2018 11:58	179.25	165.33

Well I-04 SAPT Data		
Tranducer Serial Number:	519257	
Tranducer Model:	Level TROLL 400 non-vented 300 psi	
Date and Time	Pressure (PSI)	Corrected Presssure (PSI) (Sensor pressure - barometric pressure)
4/26/2018 11:59	179.26	165.33
4/26/2018 12:00	179.25	165.33
4/26/2018 12:01	179.23	165.31
4/26/2018 12:02	179.26	165.34
4/26/2018 12:03	179.27	165.35
4/26/2018 12:04	179.26	165.34
4/26/2018 12:05	179.26	165.34
4/26/2018 12:06	179.25	165.33
4/26/2018 12:07	179.28	165.36
4/26/2018 12:08	179.27	165.35
4/26/2018 12:09	179.27	165.35
4/26/2018 12:10	179.29	165.37
4/26/2018 12:11	179.26	165.34
4/26/2018 12:12	179.31	165.39
4/26/2018 12:13	179.28	165.36
4/26/2018 12:14	179.26	165.34
4/26/2018 12:15	179.28	165.36
4/26/2018 12:16	179.29	165.37
4/26/2018 12:17	179.28	165.35
4/26/2018 12:18	179.27	165.34
4/26/2018 12:19	179.29	165.37
4/26/2018 12:20	82.09	68.17
4/26/2018 12:21	13.94	0.02
4/26/2018 12:22	13.90	-0.02

APPENDIX G

Cement Bond Log Summary

WELL I-04

Geophysical Log Summary

COMPANY:	FLORENCE COPPER COMPANY	Logging Engineer:	VARIOUS
FIELD:	FLORENCE COPPER SITE	Date Logged:	VARIOUS
WELL ID:	I-04	Processed By:	K.M / B.C.
COUNTY:	PINAL STATE: ARIZONA	Date Processed:	07-18-18

Southwest Exploration Services, LLC
borehole geophysics & video services

HALEY ALDRICH

I-04 Sonic CBL with Density Summary

Depth
1in:20ft

Nat. Gamma — Cased 5-7-18 — 0 API 200

3-Arm Caliper — Cased 5-7-18 — 0 Inches 10

Comp Density — Cased 5-7-18 — -1 g/cc 4

Compensation — Cased 5-7-18 — -4 g/cc 1

RX1 - VDL (60mm) - Btm — Open 3-27-18 — 100 uSec 1000

RX1 - TT (60mm) - Btm — Open 3-27-18 — 100 uSec 1000

RX1 - VDL (60mm) - Top — Cased 11-27-17 — 100 uSec 1000

RX1 - TT (60mm) - Top — Cased 11-27-17 — 100 uSec 1000

Bond Index — 0 % 100

RX1 - VDL — Cased 5-7-18 — 100 uSec 1020

RX1 - TT — Cased 5-7-18 — 100 uSec 1020

RX4 - VDL — Cased 5-7-18 — 100 uSec 1020

RX4 - TT — Cased 5-7-18 — 100 uSec 1020

Velocity Analysis — Cased 5-7-18 — 40 us/ft 220

P-Wave Slow — Cased 5-7-18 — 40 us/ft 220

Steel — 40 us/ft 220

FRP — 40 us/ft 220

PVC — 40 us/ft 220

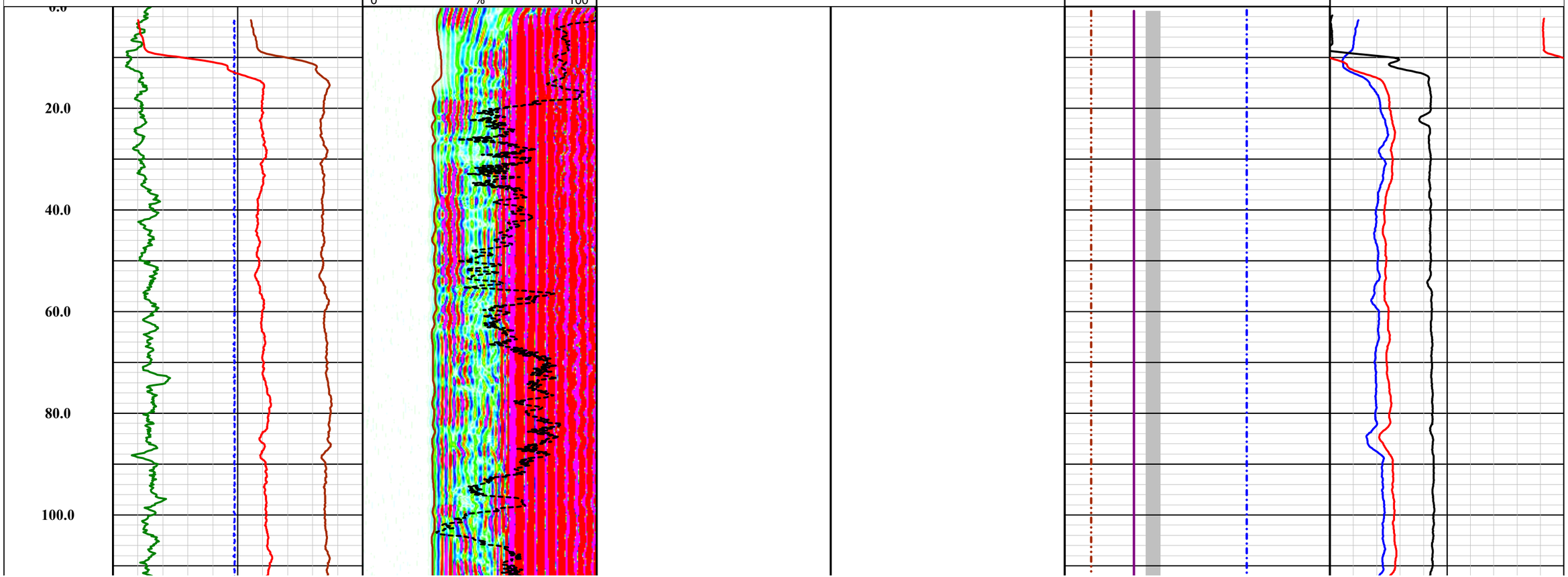
Cement

Near Density — Cased 5-7-18 — 1 g/cc 4

Far Density — Cased 5-7-18 — 1 g/cc 4

4 Pi Density (Dry) — Cased 5-7-18 — 2000 CPS 0

4 Pi Density (Wet) — Cased 5-7-18 — 400 CPS 100



120.0

140.0

160.0

180.0

200.0

220.0

240.0

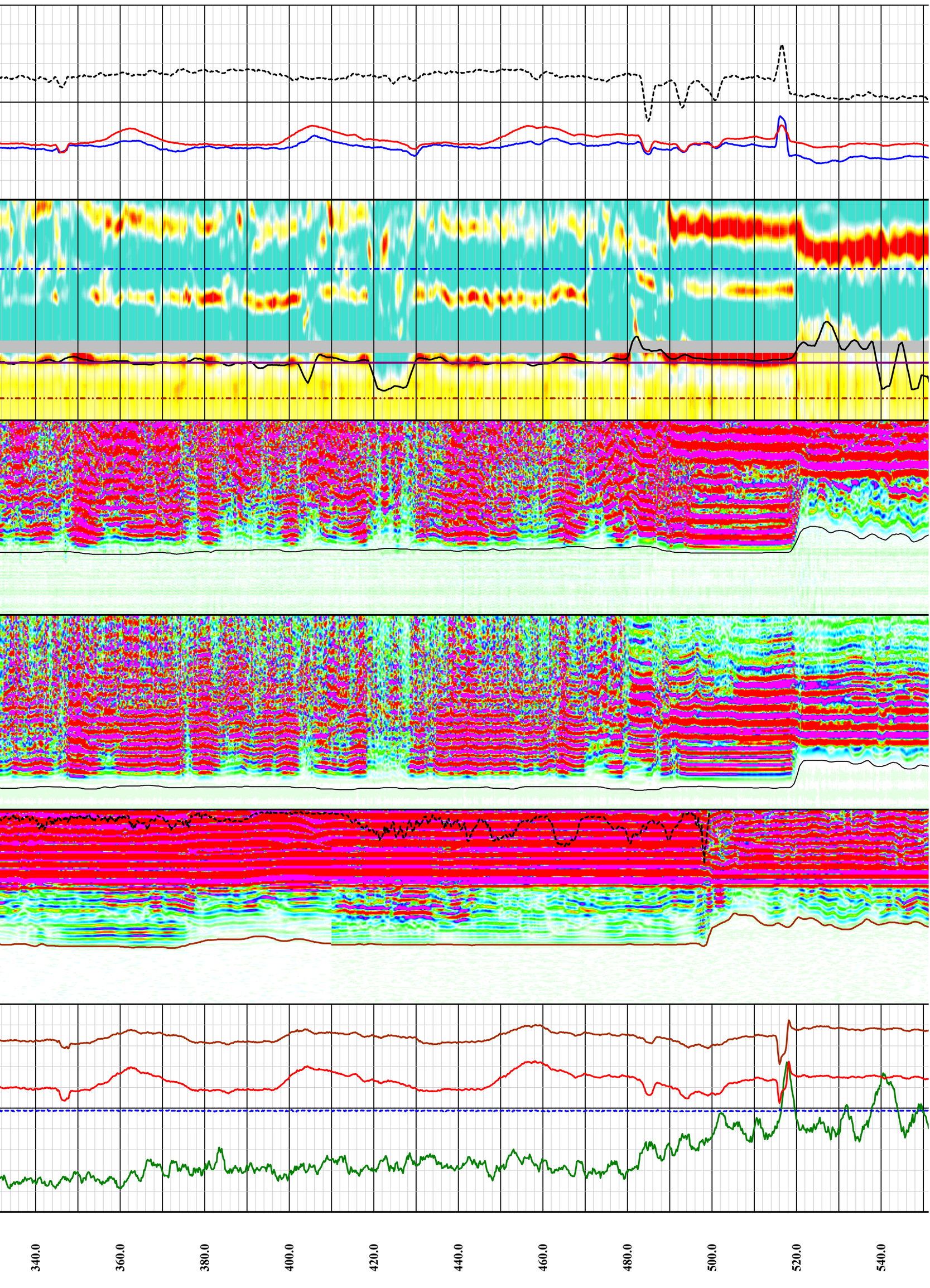
260.0

280.0

300.0

320.0

Fluid Level ~223.5'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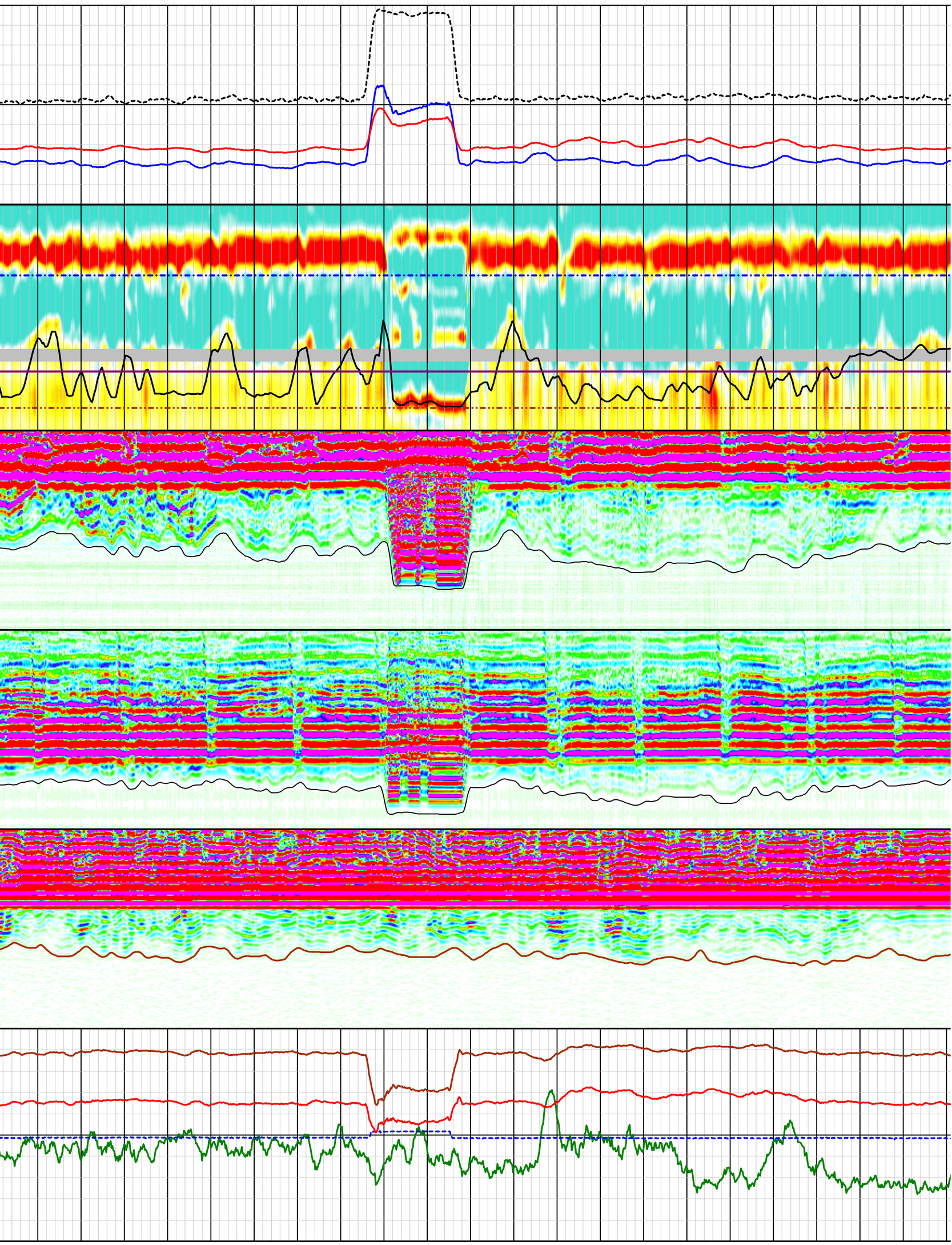
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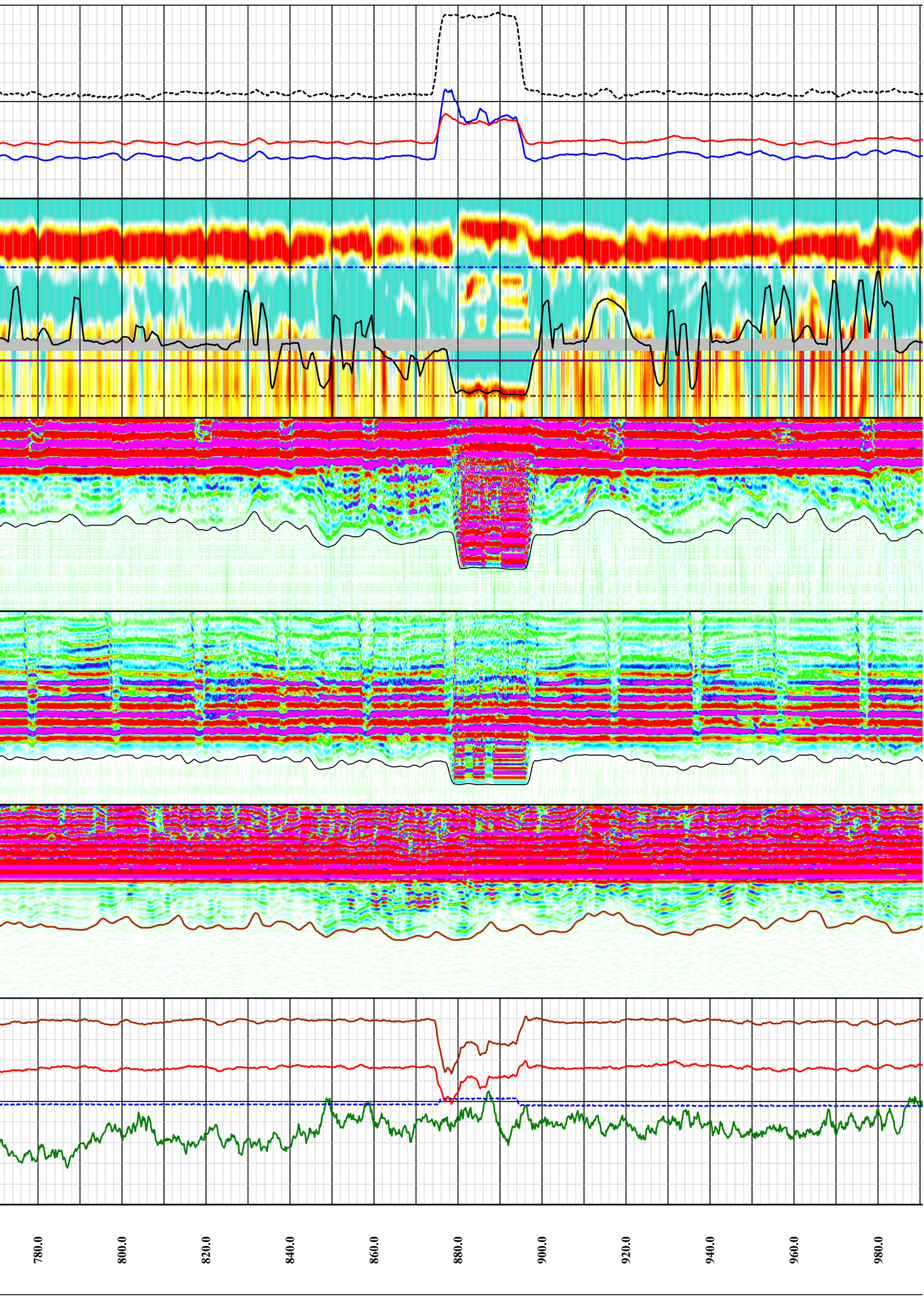
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940.0
960.0
980.0

1000.0

1020.0

1040.0

1060.0

1080.0

1100.0

1120.0

1140.0

1160.0

1180.0

1200.0

0 % 100

Bond Index

Cement

	Bond Index					
-4 g/cc 1 Cased 5-7-18 **Compensation**	100 uSec 1000 Cased 11-27-17 **RX1 - TT (60mm) - Top**			40 us/ft 220 **PVC**	400 CPS 100 Cased 5-7-18 **4 Pi Density (Wet)**	
-1 g/cc 4 Cased 5-7-18 **Comp Density**	100 uSec 1000 Cased 11-27-17 **RX1 - VDL (60mm) - Top**			40 us/ft 220 **FRP**	2000 CPS 0 Cased 5-7-18 **4 Pi Density (Dry)**	
0 Inches 10 Cased 5-7-18 **3-Arm Caliper**	100 uSec 1000 Open 3-27-18 **RX1 - TT (60mm) - Btm**	100 uSec 1020 Cased 5-7-18 **RX1 - TT**	100 uSec 1020 Cased 5-7-18 **RX4 - TT**	40 us/ft 220 Cased 5-7-18 **P-Wave Slow**	1 g/cc 4 Cased 5-7-18 **Far Density**	
0 API 200 Cased 5-7-18 **Nat. Gamma**	100 uSec 1000 Open 3-27-18 **RX1 - VDL (60mm) - Btm**	100 uSec 1020 Cased 5-7-18 **RX1 - VDL**	100 uSec 1020 Cased 5-7-18 **RX4 - VDL**	40 us/ft 220 Cased 5-7-18 **Velocity Analysis**	1 g/cc 4 Cased 5-7-18 **Near Density**	
1in:20ft **Depth**	**I-04 Sonic CBL with Density Summary**					

APPENDIX H

Well Development Field Forms

DEVELOPMENT
FIELD DATA LOG

Project Name: FCI PTF	Project No.: 129687-007
Well No.: I-04	Date: 4-12-15
Location: Florence AZ	Measuring Point: —
Total Depth of Well (ft bls): Drilling	Screen Interval (ft bls): 500-1200
Pump Type/Setting (ft bls): Airlift	Activity: Airlift
How Q Measured: Visual Estimates	H&A Personnel: T. Snow, S. Hensel

5 gal bucket w/ stopwatch

Start pairlifting ~~pumping~~ @ 1830

Time	Discharge (gpm)	Pumping ~~Water~~ Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (µmhos/cm)	Temp. °C	Turbidity NTU	Comments
1900	~1.5	400	1.5	~~3~~	9.69	1399	17.95	7Range	
2000	~1.5	400	5	~~2~~	8.74	1452	18.52	OR	OR = Out of Range
2030	~1.5	400	7	~~4~~	8.69	1443	18.67	OR	Muddy Drill Fluid
2130	~1.5	400	5	~~4~~	9.01	1423	18.11	OR	" "
2230	~1.5	400	3	~~5~~	9.40	1385	17.87	OR	" "
2300	~~~~	← 0.1 gpm 400		0	9.15	1377	17.62	OR	Not getting much Discharge
0200	~10	605		3.5	8.62	1436	19.01	~~OR~~	Brown Cloudy / little drill mud
0300	~10	605		1.0	8.72	1419	19.88	OR	Brown Cloudy / TR drill mud
0330	~10	605		0.5	8.60	1401	19.71	OR	Brown Cloudy
0400	~~~~	800							Lower to 800
0515	~10	800							Start Airlift
0530	~10	800		2.0	8.73	1413	20.70	OR	Brown Cloudy / Drill Mud
0625	~10	800		1.2	8.71	1447	21.47	OR	Brown cloudy / Drill mud
0650	~10	800		1.3	8.74	1440	21.56	OR	"
0720	~10	800		1.0	8.71	1459	22.02	OR	"
0740	~10	800		0.5	8.73	1470	22.72	OR	Brown cloudy
0810	~10	800		0.3	8.71	1475	22.82	OR	Brown cloudy
0825	~10	800		0.3	8.71	1464	22.45	OR	"
0845	~10	800		0.3	8.71	1471	22.91	OR	"
0910	~10	800		0.1	8.69	1440	22.97	OR	Brown cloudy
0935	~10	800		0.1	8.72	1446	23.31	OR	"
0950	~10	800		0.0	8.70	1446	23.30	OR	"
1015									Lower to 1100
1110								~~OR~~	Start Airlift
1125	~12	1004		0.0	8.69	1522	23.43	OR	Brown cloudy
1155	~12	1004		0.2	8.71	1504	23.90	OR	Brown cloudy
1220	~12	1004		0.1	8.69	1494	23.91	OR	Brown cloudy
1250	~12	1004		0.0	8.70	1505	24.30	490	Cloudy

Comments:

HALEY ALDRICH

DEVELOPMENT
FIELD DATA LOG

Project Name: FCI - PTF	Project No.: 129687-007
Well No.: E-04	Date: 4/13/18
Location: Peoria, AZ	Measuring Point: Discharge
Total Depth of Well (ft bls): ~200	Screen Interval (ft bls): 500-1205
Pump Type/Setting (ft bls): Airlift	Activity: Airlift
How Q Measured: Bucket/Stopwatch	H&A Personnel: S Hensel

Time	Discharge (gpm)	Pumping Water Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (µmhos/cm)	Temp. °C	Turbidity NTU	Comments
~~1325~~	~~~~							~~OR~~	~~brown cloudy~~
1610		1170							Airlift on
1635	~2	1170		0.0	8.77	1337	23.79	OR	Brown cloudy, drill mud
1745	~2	1170		5.5	9.11	1349	22.32	OR	Brown cloudy, drill mud
1845	~2	1170		5.1	8.87	1333	20.62	OR	Brown Cloudy, drill Mud
1945	~2	1170		10.0	8.69	1342	19.67	401	Cloudy w/ gravel
2045	~2	1170		5.1	8.64	1347	19.73	325	Cloudy w/ gravel
2145	~2	1170		4.0	8.64	1342	19.91	300	Cloudy w/ gravel
2245	~2	1170		2.3	8.68	1350	19.87	241	Cloudy w/ gravel
2345	~2	1170		0.2	8.60	1350	19.62	117	Cloudy w/ gravel
0045	~2	1170		0.0	8.63	1353	19.55	75.5	Cloudy
0145	~2	1170		0.0	8.63	1354	19.81	OR	Brown, cloudy
0230	~2	1170		0.0	8.64	1359	19.35	OR	Brown, cloudy
0330	~2	1170		0.0	8.61	1350	20.41	130	Cloudy
0430	~2	1170		0.0	8.63	1353	20.22	87.6	Cloudy
0530	~2	1170		0.0	8.63	1349	20.40	49.4	Cloudy
								~~[illegible]~~	~~cloudy~~
0630	~2	1170		0.0	8.69	1380	21.05	57.1	SL Cloudy
0700	—	—							Airlift is shut
	- INJECT CHLORINE @ 1000, 750, 520								
4/14/18 2300									Start Airlifting Chlorine
2315	~10	420		0.0	8.66	1580	19.90	OR	Brown, turbid
0015	~10	420		30.0	8.63	1599	18.67	OR	Brown, turbid Free Cl_2 = +4.40 Total Cl = +4.40
0115	~10	420		3.5	8.63	1898	18.07	OR	Light Brown, ~~turbid~~ B
0215	~10	420		0.0	8.62	2065	17.22	57.8	Light Brown Fol. = +4.40 Tot Cl = +4.40
0400 ~~0315~~	~10	620		30.0	8.41	2010	20.48	OR	Brown, turbid
0600	~10	620							
4/15/18 0644	~10	620			9.52	1840	18.39	986	white, cloudy Total Cl: +4.40

Comments:

HALEY ALDRICH

DEVELOPMENT
FIELD DATA LOG

Project Name: FCI PTF	Project No.: 128 129687
Well No.: I-04	Date: 4/15/18 - 4-16-18
Location: Florence, AZ	Measuring Point: discharge
Total Depth of Well (ft bls): 1200	Screen Interval (ft bls): 500 - 1200
Pump Type/Setting (ft bls): Airlift - After CL	Activity: Air Lift
How Q Measured: Cone/stopwatch	H&A Personnel: S. Kaney

Time	Discharge (gpm)	Pumping Water Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (µmhos/cm)	Temp. °C	Turbidity NTU	Comments
0730	~5	620	-	<0.1	8.52	1836	19.91	262	light brown, cloudy
0845	~5	620	-	<0.1	8.11	2118	20.79	724	SAA Total Cl: 24.40
0945	~5	620	-	<0.1	8.12	1597	22.23	197	SAA
1040	~5	620	-	<0.1	8.01	2055	21.09	869	SAA Free Cl: >4.40
1120	~5	620	-	<0.1	7.84	2084	22.15	OR	SAA
1155	~5	620	-	<0.1	7.80	2022	22.25	681	SAA Free Cl >4.40
1240	~5	620	-	<0.1	7.82	2009	22.50	522	SAA
1310	~5	620	-	<0.1	7.88	2053	23.58	22478	SAA
1355	~5	620	-	<0.1	7.81	2039	23.50	340	SAA Free Cl: >4.40
1515	~5	620	-	<0.1	7.81	1972	22.81	200	SAA
1600	~5	620	-	<0.1	7.81	1970	23.94	138	SAA Free Cl: >4.40
1645	~5	620	-	<0.1	7.79	1931	22.95	107	SAA
1745	~5	620	-	<0.1	7.87	1891	22.26	108	SAA Free Cl: >4.40
4-16-18 1325		800	START		AIRLIFT				EDUCTOR @ 800
1356	~5	800	-	0	8.16	1906	21.07	OR	BROWN
1415	~5	800	-	~~>~~0.1	8.09	1830	24.06	431	MURKY / LIGHT BROWN
1445	~5	800	-	0	8.01	1851	24.15	91	FREE CL 0.01
1510		AIR LIFT OFF							
1610		AIR LIFT ON			@ 1000 ft				
1640	~5	1600		~~>~~0.1	7.87	3496	23.85	780	LIGHT BROWN
1735	~5	1000	-	0	7.96	1977	22.65	99	MUCKY FREE CL= 0.0
1745		AIR LIFT OFF							
1800		AIR LIFT ON			@ ~1185				
2000	~5	1185	-	80	8.23	1992	22.47	~~OR~~ 871	Brown Free Cl_2 = 3.33
2130	~5	1188	-	0.1	8.32	1969	22.83	575	Lt. Brown ~~Free Cl~~
2330	~5	1190	-	2.5	8.31	1847	21.95	96.3	Lt. Brown
0045	~5	1192	-	0.5	8.29	1773	21.42	57.9	Lt. Brown/Cloudy Free Cl_2 = 0.25
0405	~5	1195	-	2.0	8.24	1741	21.18	225	Brown

Comments:

HALEY ALDRICH

DEVELOPMENT
FIELD DATA LOG

Project Name: FCI PTFE	Project No.: 129687
Well No.: I-04	Date: 4/17/18
Location: Florence, AZ	Measuring Point: discharge
Total Depth of Well (ft bls): 1200	Screen Interval (ft bls): 500 - 1200
Pump Type/Setting (ft bls): Air lift - After CI	Activity: Air lift
How Q Measured: Cone/Stopwatch	H&A Personnel: T. Snow / E. Ginsti

Time	Discharge (gpm)	Pumping Water Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (µmhos/cm)	Temp. °C	Turbidity NTU	Comments
0530	~5	—	~~1720~~	5.0	8.22	17.20	21.37	OR	BROWN Free Cl = 4.40
0730	~5	~~1193~~ 1195	—	3	8.20	1743	21.54	OR	LIGHT BROWN
0900	~5	~~1194~~ 1197	—	6	8.03	1776	23.65	OR	LIGHT BROWN
1010	~5	~1197	—	2	8.15	1753	23.62	450	LIGHT BROWN
1100	~5	~1197	—	0.1	8.01	1791	24.69	300	LIGHT BROWN
1215	~5	~1197	—	?	7.90	1768	24.51	59.5	LIGHT BRN
1400	~5	~1197	—	?	7.91	1773	24.62	38.1	MUCKY FREE CL = 0.0
1410	—	AIR LIFT			OFF	—			
1530	—	START PUMP DEVELOPMENT			@			1/60 feet	
1720	58	251.9	953000	0	7.73	1633	25.31	7.25	CLEAR
1740	58	252.0	954135	0	7.35	1618	25.47	6.36	CLEAR
*									
1915	58	253.0	959952	0	7.38	1582	24.06	5.11	Clear
2030	58	253.9	963830	0	7.43	1545	23.43	4.07	Clear
2045	—	PUMP OFF			@ TO SURGE @ HH				
2115	—	PUMP ON			@				
2200	58	253.8	968385	0	7.49	1560	22.65	7.20	Clear
2330	58	254.2	973590	0	7.45	1469	21.37	3.27	Clear
0130	—	—	AIR LIFT		OFF	—			Pump
0245	—	—	AIR LIFT		ON @	900'			
0300	58	253.0	982260	0	7.77	1145	20.92	4.20	Clear
0430	58	254.2	987000	0	7.66	1109	20.73	2.10	Clear
0430	—	—	AIR LIFT		OFF	—			Pump
0545	—	—	AIR LIFT		ON @	600'			
0830	63	251.9	998180	0	7.71	1540	25.2	2.78	CLEAR
0845	64	251.9	999400	0	7.72	1543	25.3	3.97	Clear
0900	64	251.9	1000750	0	7.77	1551	25.3	3.01	Clear
0905	—	—	Pump OFF		—	—	—	—	—

Comments:

HALEY ALDRICH

DEVELOPMENT
FIELD DATA LOG

Project Name:	FCI - PTF	Project No.:	129687
Well No.:	I-04	Date:	4/19/18
Location:	Florence, Az	Measuring Point:	discharge
Total Depth of Well (ft bls):	1200'	Screen Interval (ft bls):	500 - 1200
Pump Type/Setting (ft bls):		Activity:	Pump development
How Q Measured:		H&A Personnel:	C. Giusti / E. Fredrickson

Time	Discharge (gpm)	Pumping Water Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (µmhos/cm)	Temp. °C	Turbidity NTU	Comments
0920			Pump		on	@	600'		
0925	64	239	100150	0	7.69	1541	25.7	9.72	Clear
0940	63	251.3	1002050	0	7.71	1549	25.7	3.92	Clear
0955	63	251.5	1003105	0	7.77	1547	25.6	3.65	Clear
1010	63	251.7	1004060	0	7.78	1546	25.51	3.65	Clear
1025	63	251.8	1005010	0	7.76	1546	25.52	2.72	Clear
1040	63	251.8	1005870	0	7.81	1539	25.38	5.18	Clear
1055	63	252.0	1006740	0	7.76	1544	25.61	2.03	Clear
1100		Pump		Off					
1125		239.5	Pump		on	@	600'		
1130	64	250.1	1007310	0	7.78	1546	25.51	8.62	Clear
1230	64	251.8	1011400	0	7	1605	25.42	4.14	clear
1415	64	252.1	1018070	0	7.57	1600	25.41	1.18	clear
1430		PUMP	OFF	END	DEVELOPMENT				

Comments:

HALEY ALDRICH

APPENDIX I

Well Video Log and Gyroscopic Survey Reports

Southwest Exploration Services, LLC
borehole geophysics & video services

Southwest Exploration Services, LLC

25811 S. Arizona Avenue Chandler, AZ. 85248

Phone: (480) 926-4558 Fax: (480) 926-4579 Web: www.swexp.com

Client: Florence Copper | Survey Date: April 17, 2018

Address: 1575 West Hunt Hwy | Invoice: | Run: 1

City: Florence | State: AZ | Zip: 85132 | **Well Name:** I-04

Requested By: H&A | P.O.: | **Well Owner:** Florence Copper

Copy To: | Camera: CCV S.S. Color Camera - Ring of Lights

Purpose: General Inspection | Zero Datum: Top of Casing

Location: | Depth: 1200 ft. | Vehicle: 290

Field: Florence Copper Project | Type Perfs: Full Flo Louvers

1st Csg.O.D. 5 In. | Csg Weight: | From: 0 ft. | To: 1200 ft. | 2nd Csg.O.D. | Csg Weight: | From: | To:

Standing Water Level: 238.06 ft. | Pumping Water Level: | Pump Depth: | O.D.Ref.: Measured | Casing Buildup: None

Operator: D. Beam | Lat.: | Long.: | Sec: | Twp: | Rge:

Other Information:

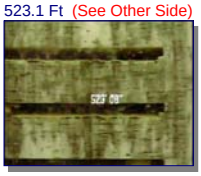
Wellbore Snapshots

0 Ft (See Other Side)

238.1 Ft (See Other Side)

522 Ft (See Other Side)

523.1 Ft (See Other Side)

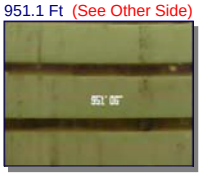


680 Ft (See Other Side)

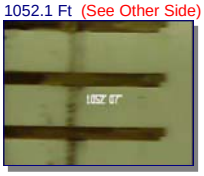
883 Ft (See Other Side)

943.1 Ft (See Other Side)

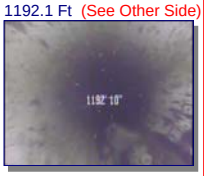
951.1 Ft (See Other Side)



1052.1 Ft (See Other Side)



1192.1 Ft (See Other Side)



1200 Ft (See Other Side)

True Depths: (SideScan-Feet)	WELLBORE / CASING INFORMATION
0.	Survey started at the top of the case.
238.1	Static water level observed.
522.	Transition piece observed.
523.1	First perforations observed.
680.	Down view of the casing.
883.	Blank section observed.
943.	Casing still appears clean.
951.1	Perforations appear to be in good condition.
1,052.1	Perforations condition unchanged.
1,192.1	A small amount of build up near the bottom of the casing.
1,200.	Bottom of casing observed, survey ended.

Notes:

11 WELLBORE SHAPSHOTS

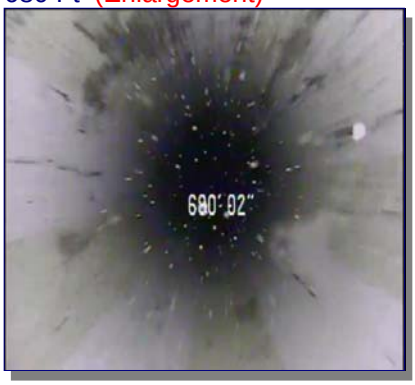
0 Ft (Enlargement)

238.1 Ft (Enlargement)

522 Ft (Enlargement)

523.1 Ft (Enlargement)

680 Ft (Enlargement)



883 Ft (Enlargement)

943.1 Ft (Enlargement)

951.1 Ft (Enlargement)

1052.1 Ft (Enlargement)

1192.1 Ft (Enlargement)

1200 Ft (Enlargement)

Drift Report

Wellbore DRIFT Interpretation

PREPARED ESPECIALLY FOR

Florence Copper and Florence Copper

I-04

Monday - May 7, 2018

Southwest Exploration Services, LLC
borehole geophysics & video services

Southwest Exploration Services, LLC
(480) 926-4558

WELLBORE DRIFT INTERPRETATION

Southwest Exploration Services, LLC

(480) 926-4558

Company: Florence Copper **Well Owner:** Florence Copper

County: Pinal **State:** Arizona **Country:** United States

Well Number: I-04 **Survey Date:** Monday - May 7, 2018 **Magnetic Declination:** Declination Correction Not Used

Field: Florence Copper Project **Drift Calculation Methodology:** Balanced Tangential Method

Location:

Remarks:

Witness: H&A **Vehicle No.:** 310 **Invoice No.:** **Operator:** E. BEAM **Well Depth:** 1220 Feet **Casing size:** 5 Inches

Tool: Gyro - 1714 **Lat.:** **Long.:** **Sec.:** **Twp.:** **Rge.:**

MEASURED DATA			DATA COMPUTATIONS						
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	TVD, feet	T. LATITUDE, feet	T. LONGITUDE, feet	DOGLEG SEV., degrees per 20 Feet	DOGLEG SEV., degrees per 100 feet	DRIFT DIST., feet	DRIFT BGR., degrees
0	0.49	127.21	0.00						
20	0.19	269.74	19.99	-0.052	0.035	1.00	2.81	0.06' (.72")	146.00
40	0.17	311.45	39.98	-0.033	-0.020	0.41	1.06	0.04' (.48")	212.10
60	0.24	233.54	59.97	-0.038	-0.076	0.96	1.87	0.09' (1.08")	243.30
80	0.06	339.87	79.96	-0.053	-0.113	0.84	2.37	0.13' (1.56")	244.90
100	0.09	031.30	99.96	-0.030	-0.108	0.42	1.29	0.11' (1.32")	254.70
120	0.05	027.04	119.95	-0.009	-0.096	0.13	0.11	0.10' (1.20")	264.80
140	0.11	161.21	139.94	-0.019	-0.086	0.43	2.73	0.09' (1.08")	257.30
160	0.04	357.57	159.93	-0.030	-0.080	0.83	2.94	0.09' (1.08")	249.30
180	0.11	205.52	179.92	-0.040	-0.089	0.95	2.88	0.10' (1.20")	245.50
200	0.13	231.16	199.91	-0.072	-0.115	0.37	0.66	0.14' (1.68")	238.10
220	0.20	284.05	219.90	-0.078	-0.167	1.00	1.32	0.18' (2.16")	245.00
240	0.20	015.29	239.89	-0.036	-0.192	1.00	2.12	0.19' (2.28")	259.40
260	0.22	246.67	259.88	-0.018	-0.218	0.34	2.67	0.22' (2.64")	265.40
280	0.20	324.19	279.87	-0.005	-0.274	0.93	1.86	0.27' (3.24")	269.00
300	0.21	307.92	299.86	0.046	-0.323	0.78	0.42	0.33' (3.96")	278.10
320	0.16	343.53	319.85	0.095	-0.360	0.53	0.91	0.37' (4.44")	284.80
340	0.16	038.25	339.84	0.144	-0.351	0.00	1.36	0.38' (4.56")	292.30

True Vertical Depth: 1195.77' **Final Drift Distance:** 5.02' (60.24") **Final Drift Bearing:** 53.40°

Note: Magnetic Declination is not used because it is not a factor in the calculation of well drift or alignment. Magnetic Declination is only important if attempting to hit a target or miss another well and then it is included in the calculations.

WELLBORE DRIFT INTERPRETATION

Southwest Exploration Services, LLC

I-04

(480) 926-4558

MEASURED DATA			DATA COMPUTATIONS						
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	TVD, feet	T. LATITUDE, feet	T. LONGITUDE, feet	DOGLEG SEV., degrees per 20 Feet	DOGLEG SEV., degrees per 100 feet	DRIFT DIST., feet	DRIFT BRG., degrees
360	0.05°	055.56°	359.83	0.171	-0.327	0.56	0.45	0.37' (4.44")	297.60
380	0.07°	342.87°	379.82	0.188	-0.323	0.73	1.76	0.37' (4.44")	300.10
400	0.12°	017.28°	399.81	0.220	-0.320	0.88	0.88	0.39' (4.68")	304.40
420	0.05°	057.61°	419.80	0.245	-0.306	0.20	1.02	0.39' (4.68")	308.60
440	0.03°	057.69°	439.79	0.252	-0.294	0.97	0.00	0.39' (4.68")	310.60
460	0.14°	025.04°	459.78	0.277	-0.279	0.96	0.83	0.39' (4.68")	314.80
480	0.10°	042.22°	479.77	0.312	-0.257	0.12	0.44	0.40' (4.80")	320.50
500	0.12°	043.57°	499.76	0.340	-0.231	0.81	0.03	0.41' (4.92")	325.80
520	0.07°	070.73°	519.75	0.359	-0.205	0.59	0.70	0.41' (4.92")	330.30
540	0.23°	045.61°	539.74	0.391	-0.165	0.73	0.65	0.42' (5.04")	337.20
560	0.24°	064.17°	559.73	0.437	-0.099	0.28	0.48	0.45' (5.40")	347.30
580	0.23°	005.89°	579.72	0.495	-0.057	0.77	1.44	0.50' (6.00")	353.40
600	0.11°	076.56°	599.71	0.539	-0.034	0.49	1.72	0.54' (6.48")	356.40
620	0.16°	160.66°	619.70	0.517	-0.006	0.69	1.99	0.52' (6.24")	359.30
640	0.26°	056.78°	639.69	0.516	0.041	0.13	2.34	0.52' (6.24")	004.60
660	2.19°	108.80°	659.68	0.418	0.441	0.83	1.30	0.61' (7.32")	046.50
680	0.37°	065.47°	679.67	0.322	0.861	0.80	1.10	0.92' (11.04")	069.50
700	0.27°	039.26°	699.66	0.385	0.950	0.25	0.67	1.02' (12.24")	067.90
720	0.35°	057.16°	719.65	0.455	1.031	0.54	0.46	1.13' (13.56")	066.20
740	0.21°	030.08°	739.64	0.520	1.101	0.24	0.69	1.22' (14.64")	064.70
760	0.35°	036.90°	759.63	0.601	1.156	0.94	0.18	1.30' (15.60")	062.50
780	0.42°	040.16°	779.62	0.706	1.240	0.65	0.08	1.43' (17.16")	060.30
800	0.52°	029.96°	799.61	0.841	1.333	0.97	0.26	1.58' (18.96")	057.80
820	0.41°	040.37°	819.60	0.974	1.425	0.06	0.27	1.73' (20.76")	055.60
840	0.42°	056.00°	839.59	1.070	1.532	0.29	0.40	1.87' (22.44")	055.10
860	0.34°	051.82°	859.58	1.148	1.639	0.57	0.11	2.00' (24.00")	055.00
880	0.32°	041.55°	879.57	1.226	1.723	0.47	0.27	2.11' (25.32")	054.60
900	1.00°	047.13°	899.56	1.387	1.888	0.42	0.15	2.34' (28.08")	053.70
920	0.57°	050.87°	919.55	1.569	2.093	0.69	0.10	2.62' (31.44")	053.20
940	0.61°	042.86°	939.54	1.710	2.243	0.04	0.21	2.82' (33.84")	052.70
960	0.51°	028.78°	959.53	1.866	2.358	0.30	0.36	3.01' (36.12")	051.60
980	0.51°	058.99°	979.52	1.990	2.477	0.98	0.77	3.18' (38.16")	051.20
1,000	0.79°	093.66°	999.52	2.027	2.691	0.95	0.88	3.37' (40.44")	053.00

Page No. 2 **True Vertical Depth: 1195.77'** **Final Drift Distance: 5.02' (60.24")** **Final Drift Bearing: 53.40°**

WELLBORE DRIFT INTERPRETATION

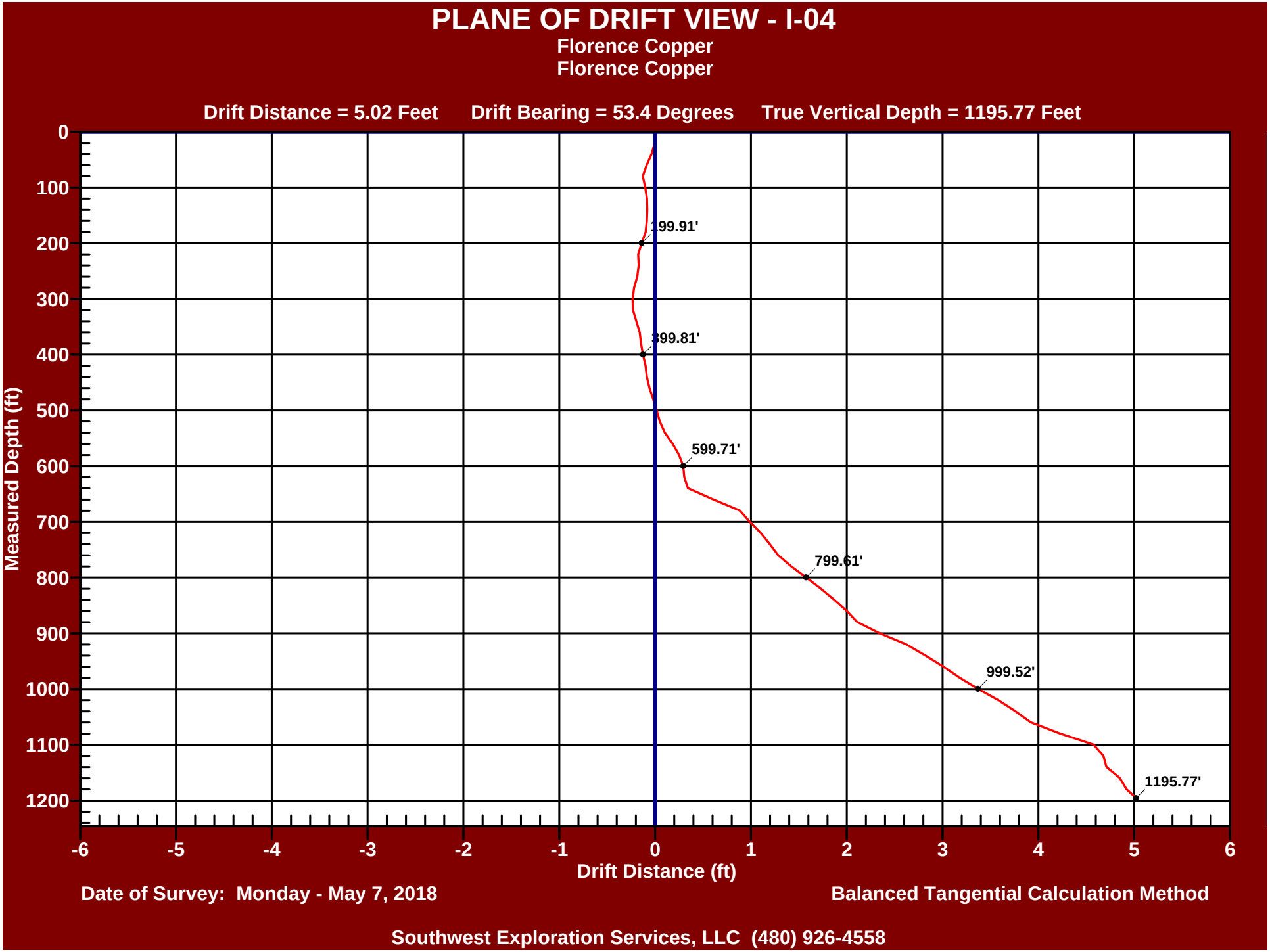
Southwest Exploration Services, LLC

I-04

(480) 926-4558

MEASURED DATA			DATA COMPUTATIONS						
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	TVD, feet	T. LATITUDE, feet	T. LONGITUDE, feet	DOGLEG SEV., degrees per 20 Feet	DOGLEG SEV., degrees per 100 feet	DRIFT DIST., feet	DRIFT BRG., degrees
1,020	0.59°	053.07°	1,019.51	2.080	2.911	0.96	1.03	3.58' (42.96'')	054.50
1,040	0.45°	053.33°	1,039.50	2.189	3.056	0.46	0.01	3.76' (45.12'')	054.40
1,060	0.91°	356.67°	1,059.49	2.394	3.110	0.25	1.41	3.92' (47.04'')	052.40
1,080	1.25°	046.25°	1,079.48	2.703	3.258	0.92	1.24	4.23' (50.76'')	050.30
1,100	0.78°	069.25°	1,099.47	2.902	3.543	0.09	0.59	4.58' (54.96'')	050.70
1,120	0.62°	160.09°	1,119.46	2.848	3.707	0.16	2.11	4.68' (56.16'')	052.50
1,140	0.36°	044.82°	1,139.45	2.791	3.788	0.98	2.51	4.71' (56.52'')	053.60
1,160	0.49°	037.97°	1,159.44	2.903	3.885	0.54	0.18	4.85' (58.20'')	053.20
1,180	0.10°	290.47°	1,179.43	2.977	3.921	0.80	2.39	4.92' (59.04'')	052.80
1,196	0.88°	083.96°	1,195.77	2.995	4.032	0.53	3.53	5.02' (60.24'')	053.40

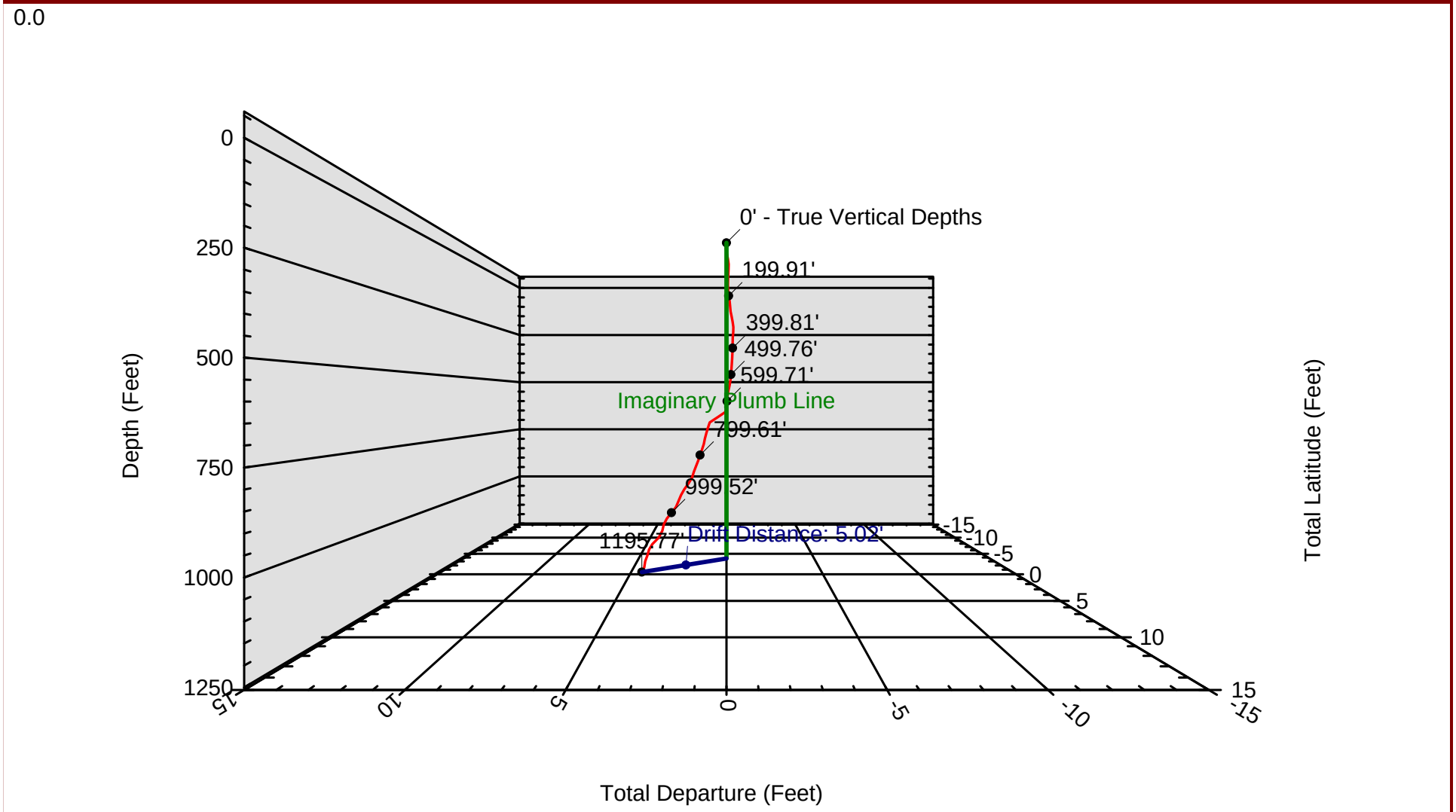
True Vertical Depth: 1195.77' **Final Drift Distance: 5.02' (60.24'')** **Final Drift Bearing: 53.40°**


PLANE OF DRIFT VIEW - I-04
Florence Copper
Florence Copper
Drift Distance = 5.02 Feet
Drift Bearing = 53.4 Degrees
True Vertical Depth = 1195.77 Feet
Measured Depth (ft)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
199.91'
399.81'
599.71'
799.61'
999.52'
1195.77'
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5
6
Drift Distance (ft)
Date of Survey: Monday - May 7, 2018
Balanced Tangential Calculation Method
Southwest Exploration Services, LLC (480) 926-4558

3D PROJECTION VIEW - I-04

Florence Copper
Florence Copper

Drift Distance = 5.02 Feet **Drift Bearing = 53.4 Degrees** **True Vertical Depth = 1195.77 Feet**



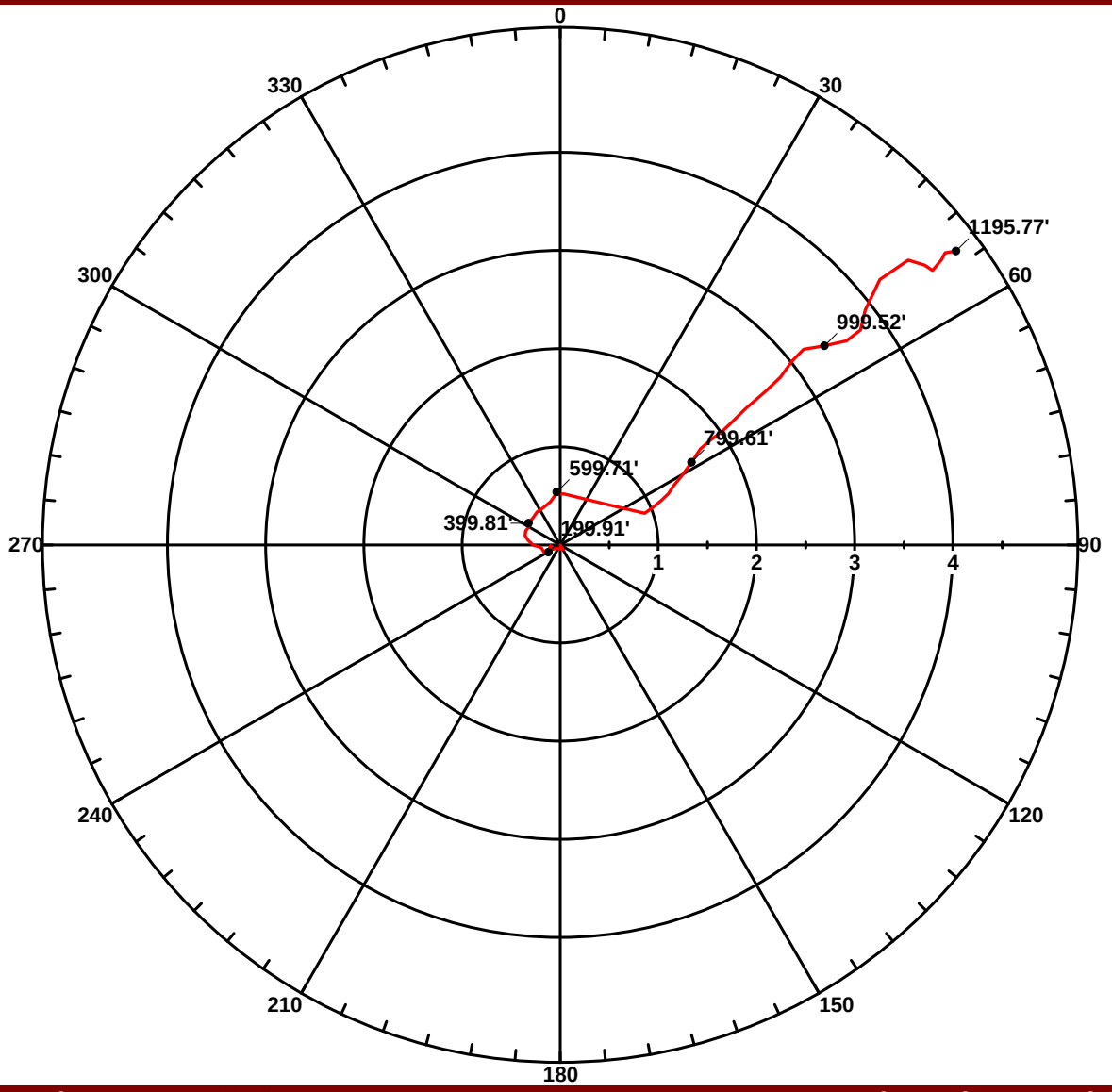
Date of Survey: Monday - May 7, 2018 **Balanced Tangential Calculation Method**

Southwest Exploration Services, LLC (480) 926-4558

POLAR VIEW - I-04

Florence Copper
Florence Copper

Drift Distance = 5.02 Feet Drift Bearing = 53.4 Degrees True Vertical Depth = 1195.77 Feet



Date of Survey: Monday - May 7, 2018 **Balanced Tangential Calculation Method**

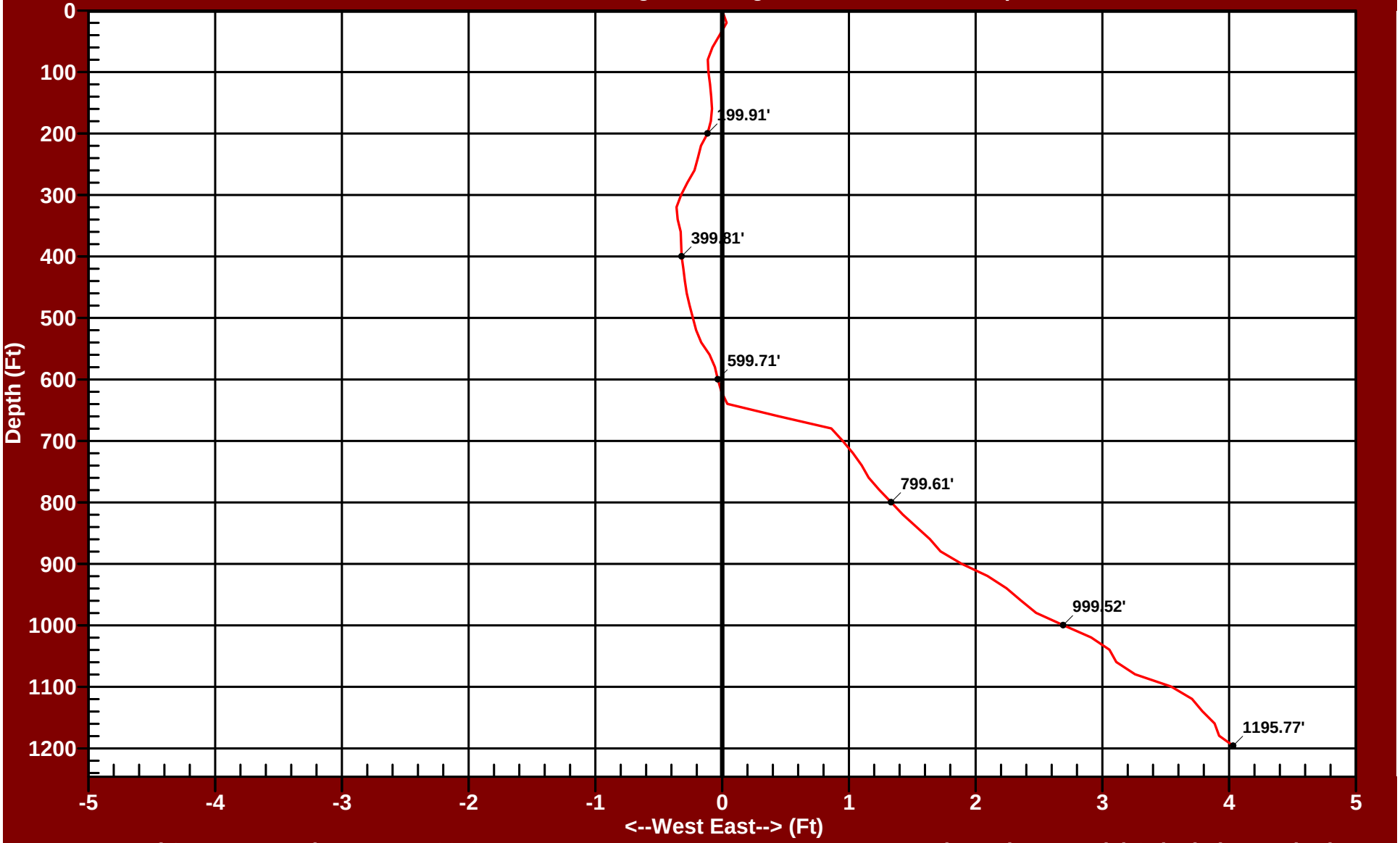
Southwest Exploration Services, LLC (480) 926-4558

EASTING RECTANGULAR VIEW - I-04

Florence Copper

Florence Copper

Drift Distance = 5.02 Feet Drift Bearing = 53.4 Degrees True Vertical Depth = 1195.77 Feet



Date of Survey: Monday - May 7, 2018

Balanced Tangential Calculation Method

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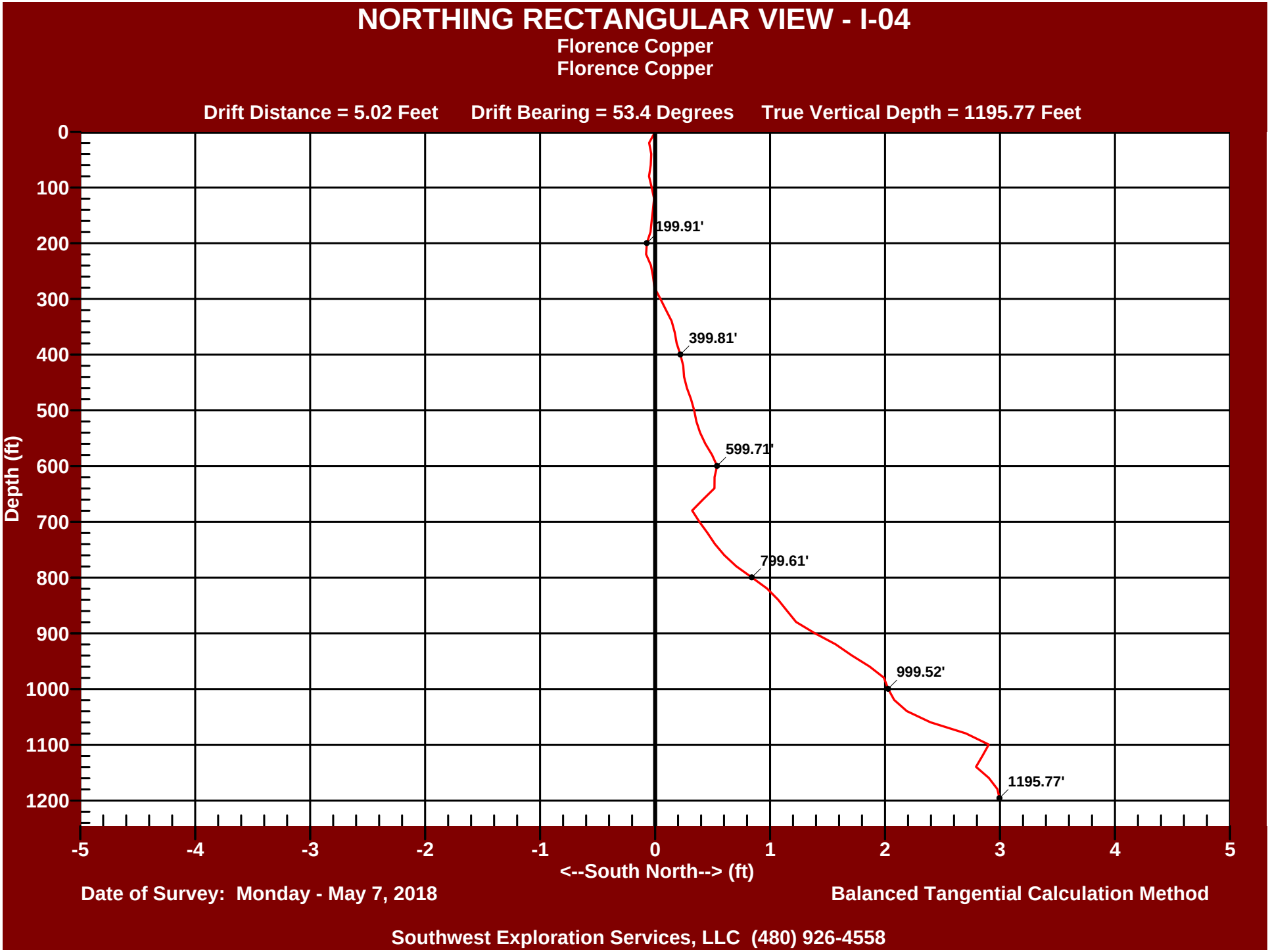
NORTHING RECTANGULAR VIEW - I-04
Florence Copper
Florence Copper
Drift Distance = 5.02 Feet
Drift Bearing = 53.4 Degrees
True Vertical Depth = 1195.77 Feet
Depth (ft)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
199.91'
399.81'
599.71'
799.61'
999.52'
1195.77'
-5
-4
-3
-2
-1
0
1
2
3
4
5
<--South North--> (ft)
Date of Survey: Monday - May 7, 2018
Balanced Tangential Calculation Method
Southwest Exploration Services, LLC (480) 926-4558